

SOUTH SHETLAND ISLANDS (SH) Subarea

Subarea Map

Site Descriptions (17)

- Aitcho Islands (AITC)
- Arctowski Station Vicinity, King George Island (ARCT)
- Baily Head/Rancho Point, Deception Island (BAIL)
- Ferraz Station Vicinity, King George Island (FERR)
- Fort Point, Greenwich Is. (FORT)
- Half Moon Island (HALF)
- Hannah Point, Livingston Island (HANN)
- Jubany Station, King George Island (JUBA)
- Mitchell Cove, Robert Island (MITC)
- Pendulum Cove, Deception Island (PEND)
- Penguin Island (PENG)
- Robert Point, Robert Island (ROBE)
- Telefon Bay, Deception Island (TELE)
- Turret Point, King George Island (TURR)
- Vapour Col, Deception Island (VAPO)
- Whaler's Bay, King George Island (WHAL)
- Yankee Harbor, Livingston Island (YANK)

Because of its close proximity to South America, the South Shetland Islands is the most heavily visited Antarctic Site Inventory subarea. Chinstrap penguins are more easily and regularly observed than in other parts of the Peninsula.

Keys:

For acronyms of Antarctic Site Inventory researchers, see Appendix 1 p. 39.

For codes relating to penguin/seabird census/population data, see Table 3, p. 49.

SOUTH SHETLAND ISLANDS (SH) SUBAREA

King George Is.

FERRAZ
STATION

ADMIRALTY BAY

MAXWELL BAY

Marsh/Fret Stations

Great Wall Station

Bellinghousen Station

Avrigus Station

King Sejong Station

ARCTOWSKI STATION

JUBANY STATION

Potter Cove

Nelson Is.

Robert Is.

MITCHELL COVE

ROBERT POINT

GREENWICH IS.

HALF/MOON IS.

FORT POINT

YANKEE HARBOR

LIVINGSTON IS.

SNOW IS.

HANNAH POINT

TELEFON BAY

Deception Is.

VAPOUR COL

BAILY HEAD

WHALE'S BAY

AITCHO ISLANDS

0

25 miles (40 km)
(21.7 nm)

N

BRANSFIELD STRAIT

GOURDIN IS.

B. O'HIGGINS
STATION

ASTROLABE
ISLAND

TRINITY PENINSULA

HOPE
BAY

**NORTHEAST (NE)
SUBAREA**

**NORTHWEST (NW)
SUBAREA**

Bone Bay

Tower Is.

Charcot
Bay

Trinity Is.

MIKKLESEN HARBOR

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ELEPHANT IS.

Aitcho Islands (AITC)

62°24'S, 59°47'W

Magnetic declination: 13.5°E

Inventory subarea: SH

Inventory acronym: AITC

Species Diversity: HIGH

Site Sensitivity: HIGH

Location — History — Features

This group of small islands lies in the N entrance to English Strait, South Shetland Islands. Robert Island is to the E, Dee Island to the SW, and Greenwich Island beyond Dee to the S. Visitor activity has concentrated on the unnamed island (on British Admiralty and US charts) found NW of Cecilia Island. See accompanying nautical chart excerpt. The islands were charted and named in 1936 by the Discovery Investigations (1925-39) for the Admiralty Hydrographic Office (the "H.O."). Shallow, offshore rocks impede zodiac maneuverability at low tide. The islands are windswept and do not afford a convenient leeward anchorage to visiting tour ships. Annual snow, which covers moss beds to the W of the landing site, may linger through January.

Landing Characteristics

Windswept location at the N entrance to English Strait, between Robert and Greenwich Islands, often shrouded in fog and mist, without a convenient leeward anchorage. Uncharted water near shore. Hazardous rocks along the shoreline may be exposed, depending on the tide. Visitor activity is on the unnamed island NW of Cecilia Island; reasonably protected visitor ingress and egress on the cobble and sand beach at the NE side of this unnamed island. Annual snow, which covers moss beds to the W of the landing site, may linger through January. "Whalebone Beach," a favored haul-out area for seals, is reached by hiking SW of the landing beach.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	November 17, 1995	BH	W. Discoverer
2.	November 29, 1995	BH	W. Discoverer
3.	December 1, 1995	RN LB	Explorer
4.	December 11, 1995	BH SF	W. Discoverer
5.	February 2, 1996	RD RP	Livonia
6.	February 9, 1996	RD RP	Livonia
7.	February 17, 1997	RN	Explorer
8.	November 25, 1997	RN SF	W. Discoverer
9.	January 18, 1999	RN	Endurance
10.	January 24, 1999	RN RD ST	Vavilov
11.	December 13, 1999	RN	Cal Star
12.	January 9, 2000	SF	Cal Star
13.	December 15, 2000	RN	Cal Star
14.	December 24, 2000	SF	Cal Star
15.	January 22, 2001	RN	Cal Star
16.	December 12, 2001	RN SF CE	Endeavour
17.	December 20, 2001	JC LGC	Endeavour
18.	December 30, 2001	RP	Endeavour
19.	January 11, 2002	RP WT	Endeavour
20.	January 22, 2002	RD LS	Endeavour
21.	February 2, 2002	MM	Endeavour
22.	December 8, 2002	RN	Endeavour
23.	December 29, 2002	RP	Endeavour
24.	January 8, 2003	SF	Endeavour
25.	January 19, 2003	RD	Endeavour
26.	January 30, 2003	MM	Endeavour

Assessment and monitoring. Surveyed, mapped, and photodocumented (aerial and terrestrial). Regular censusing of staked gentoo and chinstrap penguin groups near the regular landing beach, and of southern giant petrels, site-wide. Staked chinstrap penguin control groups located high above the regular landing beach appear to

have considerable integrity in terms of visitor absence. Abandoned southern giant petrel nests on the island's N ridge suggest an opportunity for paleoecological research. More thorough censusing of nesting kelp gulls and skuas needed. More thorough ground survey of floral communities needed. Censusing of chinstrap penguin groups at SE end of the island needed. Because of extensive, easily accessed moss beds, a degradation study seems appropriate and necessary.

Fauna — Flora — Censuses

Penguins & flying birds. Gentoo penguins, chinstrap penguins, and southern giant petrels are confirmed breeders. Blue-eyed shags, skuas, spp., and Wilson's storm-petrel also have been noted on site, but breeding was not confirmed during Inventory visits.

Recent historic gentoo census reported in Woehler (1993): 314 N3, Jan 1966). With respect to chinstrap penguins, Woehler (1993) lists four colonies at the Aitcho Islands, including Jorge Island, which comprise a "medium" sized breeding population (1,000-7,499 pairs). There is a listing of 3,500 nesting pairs (N4, from Jan 1966) at nearby Cecilia Island. However, this Cecilia Island count should be ascribed to the island located NW of Cecilia Island, which is officially unnamed on US and British Admiralty nautical charts. This unnamed island is where visitor zodiac landings occur in the Aitcho Islands group, and where Inventory censuses have been conducted. The Cecilia Island data derive from 1966 British Antarctic Survey data referenced in Croxall & Kirkwood (1979), which, based on site maps in Croxall & Kirkwood (1979), should be ascribed to the unnamed island where landings takes place, not Cecilia Island. While the total chinstrap population is listed as 3,500 nests, a note to this specific entry indicates there were two distinct chinstrap colonies, of 1,500 and 2,500 nests.

Antarctic Site Inventory censuses:

Chinstrap penguin (southern end of the island only, near the regular landing beach; but not including nesting groups on rocky, N coast, which have not been censused)

4,608	N2	1997 Nov
1,764	N1	2001 Dec

Gentoo penguins (S and SE end of the island)

1,177	N1	1999 Dec
787	C1	2002 Feb

Seals. Weddell and southern elephant seals regularly haul-out on WHALEBONE beach, and there are southern elephant seal wallows at the W end of the island on which landings occur.

Flora. *Prasiola crispa* is widespread. Extensive cushion moss, spp. beds are found W and N of WHALEBONE beach, and cover extensive areas toward the W part of the island. On N ridge, where active and abandoned southern giant petrel nests may be found, boot prints in the moss have been colonized by *Prasiola*. Snow algae noted in the early season snow cover. *Xanthoria*, spp., *Caloplaca*, spp. and other crustose lichens observed and photodocumented.

Conservation Aspects

Site sensitivities. Chinstrap and gentoo penguins nesting in widely spaced colonies above, S, and W of the landing beach are easily approached and disturbed, especially in November and early December when adults will be incubating eggs; subsequently, adults will be guarding and provisioning chicks at the nest, then in crèche. Scientific control groups of chinstrap penguins on high bluff S-SW of the landing beach. Hauled-out seals, including wallowing southern elephant seals on the far W end, are easily approached and disturbed. Southern giant petrels nesting on ridges and along the N coast are easily approached and disturbed; many unoccupied nests are evident; in November and early December they will be incubating eggs. Skuas nesting on widely scattered territories are easily approached and disturbed, particularly, later in the season (from mid-January) when adults are fiercely protecting young. Between the landing beach and the western end of the island, there are wide and extensive swards of lichens and mosses, which may be easily trampled.

Pointers for avoiding disruptions.

- Walk slowly and carefully around nesting, crèching, or molting penguins.
- Avoid and stay clear of chinstrap penguin control colonies on high bluff S-SW of the landing beach.
- Do not impede penguins' access to and from the water.
- Avoid and stay clear of skua territories.

- Walk around hauled-out seals on Whalebone Beach and wallowing southern elephant seals on the far W end.
- Avoid and stay clear of Antarctic fur seals, which should be given a wide berth and should not be approached.
- Avoid and stay clear of southern giant petrels nesting on ridges and along the N coast.
- Watch footsteps carefully, especially when snow cover is absent, to avoid trampling moss.
- Strictly control hikes to the far W end by organizing guided groups, all following the same path, and not allowing any free wandering.

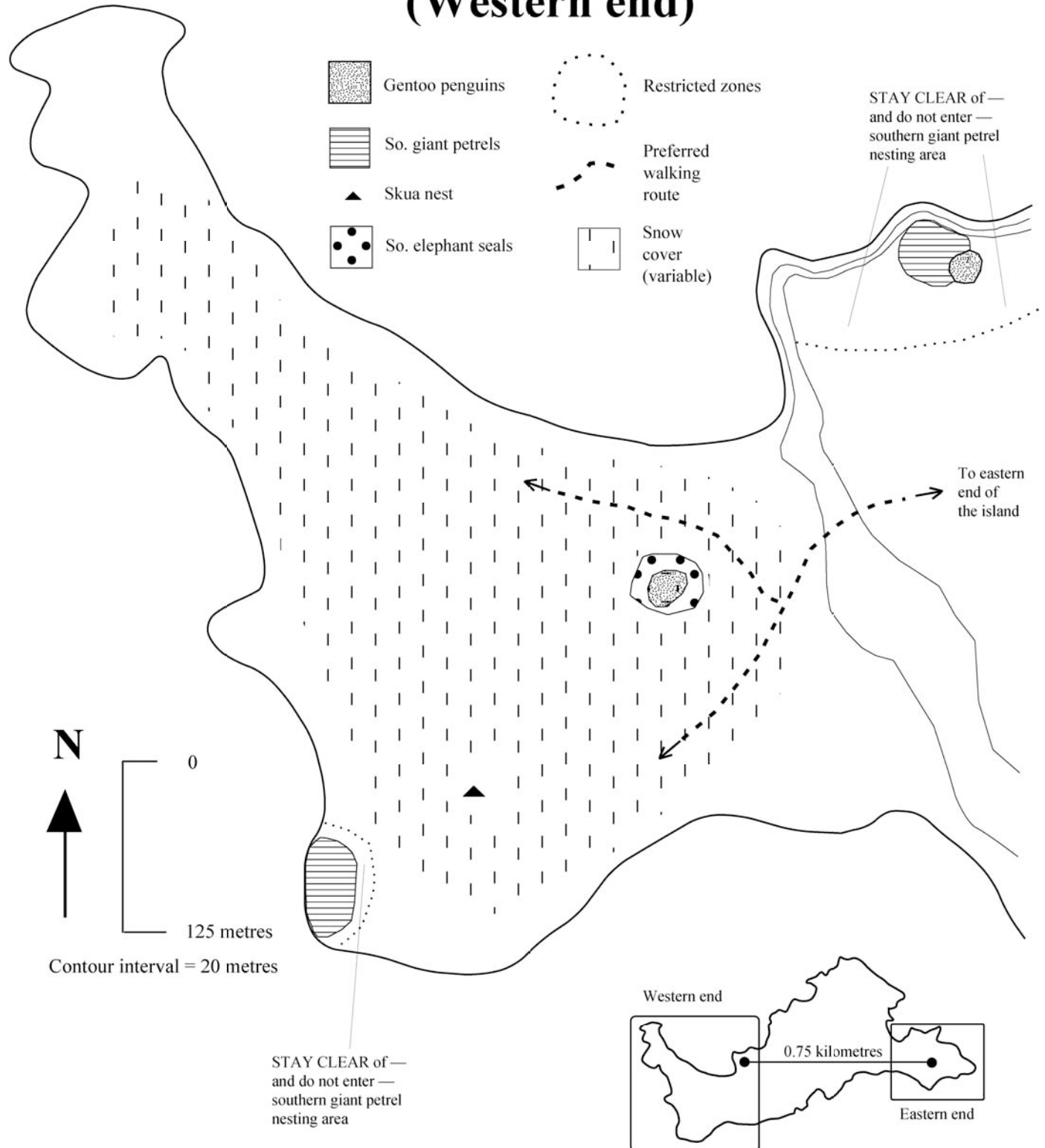
Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

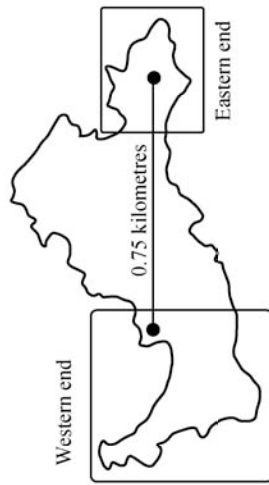
	Zodiac Landings	Participating Visitors
1989-90:	2	271
1990-91:	0	0
1991-92:	3	285
1992-93:	7	601
1993-94:	3	271
1994-95:	10	667
1995-96:	23	1,759
1996-97:	37	2,341
1997-98:	31	2,499
1998-99:	31	2,525
1999-2000:	42	3,454
2000-01:	38	3,285
2001-02:	27	2,396
2002-03:	44	3,566
14-Season Total	298	23,920






Proximate visitor sites. Robert Point and Mitchell Cove, Robert Island, and Yankee Harbor on Greenwich Island.

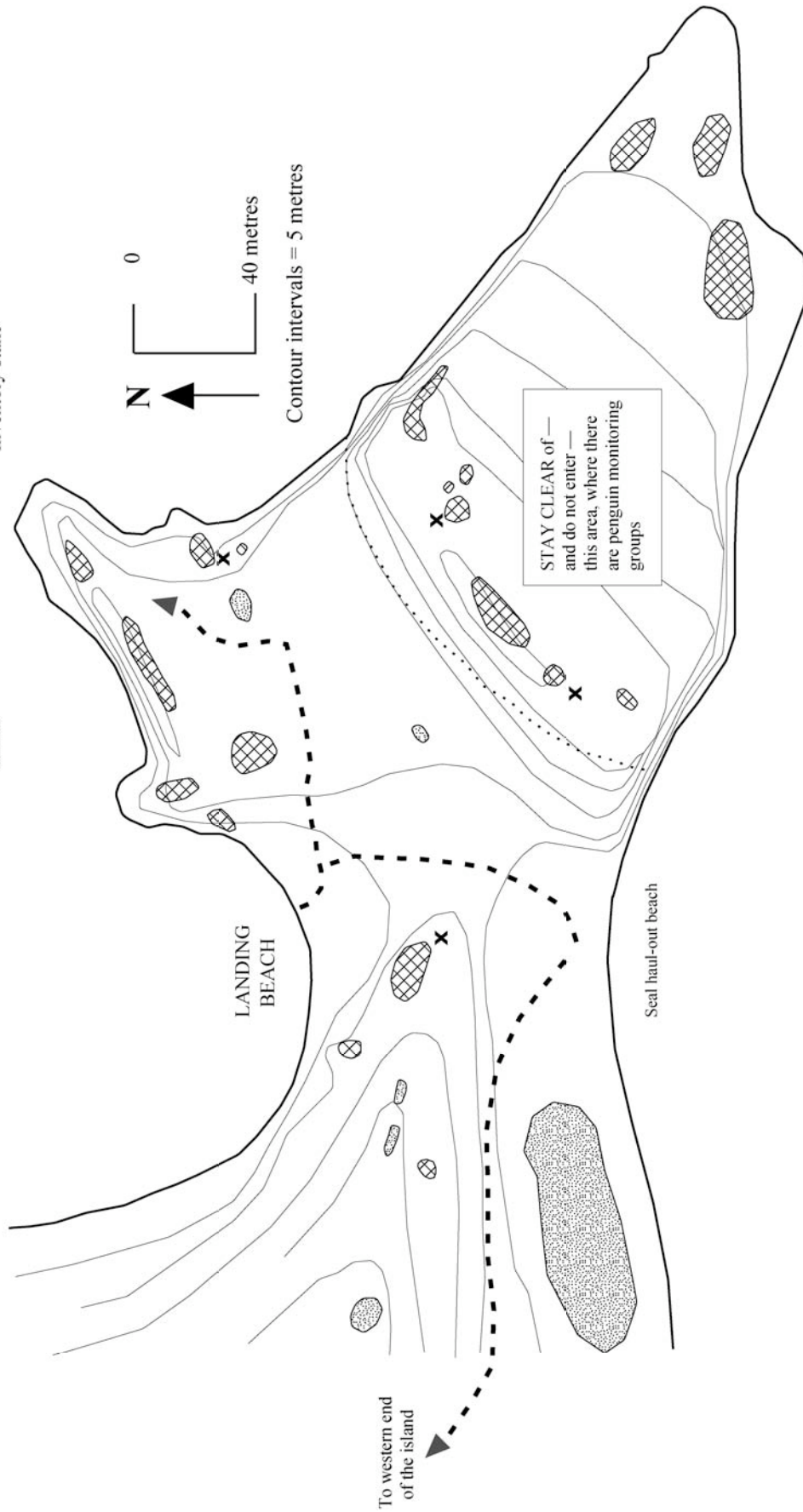
Visitor Site in the AITCHO ISLANDS (Western end)



Visitor Site in the AITCHO ISLANDS (Eastern end)



-  Gentoo penguins
-  Restricted zones
-  Preferred walking route
-  Chinstrap penguins
-  Antarctic Site Inventory stake



AITCHO ISLANDS



POINTERS FOR AVOIDING DISRUPTIONS

- WALK SLOWLY AND CAREFULLY AROUND NESTING, CRÈCHING, OR MOLTING PENGUINS
- AVOID AND STAY CLEAR OF CHINSTRAP PENGUIN CONTROL COLONIES ON HIGH BLUFF S-SW OF THE LANDING BEACH
- DO NOT IMPEDE PENGUINS' ACCESS TO AND FROM THE WATER
- AVOID AND STAY CLEAR OF SKUA TERRITORIES
- WALK AROUND HAULED-OUT SEALS AND WALLOWING SOUTHERN ELEPHANT SEALS ON THE FAR W END OF THE ISLAND
- AVOID AND STAY CLEAR OF ANTARCTIC FUR SEALS, WHICH SHOULD BE GIVEN A WIDE BERTH AND SHOULD NOT BE APPROACHED
- AVOID AND STAY CLEAR OF SOUTHERN GIANT PETRELS NESTING ON RIDGES AND ALONG THE N COAST
- WATCH FOOTSTEPS CAREFULLY, ESPECIALLY WHEN SNOW COVER IS ABSENT, TO AVOID TRAMPLING MOSS
- STRICTLY CONTROL HIKES TO THE FAR W END WITH GUIDED GROUPS, ALL FOLLOWING THE SAME PATH, AND NOT ALLOWING ANY FREE WANDERING

Arctowski Station Vicinity, King George Island (ARCT)

62°15'S, 58°51'W

Magnetic declination: 13.0°E

Inventory subarea: SH

Inventory acronym: ARCT

Species Diversity: MEDIUM

Site Sensitivity: LOW

Location — History — Features

The station is named for Henryk Arctowski, the Polish geologist, oceanographer, and meteorologist of the Belgian Antarctic expedition (1897-99). The research station lies on a flat, shingle peninsula flanked to the S by a bay-mouth bar enclosing a small lagoon. The beach is largely cobble and the bay-mouth bar is mainly rounded cobbles, but there is a black sand beach at lower water levels.

From the head of the peninsula, marked by a towering rock of brown-weathering, basalt material, visitors may traverse this cobble beach, which is known as Half Moon Beach, for almost 0.5 mile, to an elephant seal wallow at the boundary of the Point Thomas Antarctic Specially Protected Area. The beach is littered with whale bones.

The ground around the station area is spongy and muddy, made up of rounded sand and pebbly material. Directly behind the station is a large morainal ridge. This moraine has fragments of fossil woody-plant material, which appears to be *Nothofagus*, the genus of beech trees from Tierra del Fuego.

In the moss-strewn hills above and to the S of the station is an Historic Site and Monument, the grave of Wladzimirz Puchalski. He was an artist and producer of documentary films, and died in January 1979 while working at the station. The grave is marked by a tall iron cross.

Arctowski Station is the Polish research base located in Admiralty Bay, South Shetland Islands. The short, easily walked beach in “front” of the station is called Half Moon Beach, and it extends for 0.5 mile to the N boundary of the Point Thomas Antarctic Specially Protected Area (ASP). As a matter of geography, Point Thomas is located NW of Arctowski Station and outside of the ASPA, at the opening to Ezcurra Inlet. The high cliffs extending toward Ezcurra Inlet contain many nesting skuas and storm-petrels and would be easily disturbed by visitor encroachment. Half Moon Beach is frequently visited by expedition vessel passengers (usually in conjunction with Station visits), and ends at an elephant seal wallow that abuts the boundary of the ASPA.

Late in each season, fur seals often are found on the *Deschampsia* and moss inland from the beach. Skuas also breed here and the wet areas are totally off-limits to visitors. There are no colonies of penguins or seabirds along this stretch of Half Moon Beach. Skuas occasionally nest on the grassy plain inward of the landing site. As the summer progresses, a snow melt lake develops on this plain, which becomes a skua bathing spot. There is very little room for tourists between the ASPA boundary and the Station.

Landing Characteristics

Henryk Arctowski Station is the Polish research base located in Admiralty Bay. Landings near the “Lighthouse” on short cobble beach fronting the station. Visitors are confined to the cobble beach and prohibited from hiking uphill into the Antarctic Specially Protected Area, which is totally off-limits. A visitor trail, marked by stones, extends from the vicinity of the seal wallow to the station.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	November 26, 1994	RN ST	from COPA
2.	November 27, 1994	RN	from COPA
3.	December 4, 1994	RN	from COPA
4.	January 12, 1995	RN RD	Livonia
5.	November 17, 1995	RN LB	Explorer
6.	December 1, 1995	RN LB	Explorer
7.	February 2, 1996	RD RP	Livonia
8.	November 29, 1997	RN	W. Discoverer
9.	November 26, 1998	RN SF	Explorer

Assessment and monitoring. None by the Inventory. These tasks presumably accomplished by base personnel.

Fauna — Flora — Censuses

Penguins & flying birds. Confirmed breeders in the immediate station vicinity (but not within the confines of the ASPA) include Antarctic brown skuas (and hybrid skua pairs), Wilson's and black-bellied storm petrels. Adélie, gentoo, and chinstrap penguins, and kelp gulls nest within the ASPA. Blue-eyed shags nest at various locations in Admiralty Bay. All penguins breeding at this site are within the boundary of the ASPA.

Woehler & Croxall (1996) list a minimum breeding population of 8,645 pairs of Adélie penguins, 136 pairs of gentoo penguins, and 18 pairs of chinstrap penguins at Point Thomas. These counts are from the 1989-90 season and reflect decreases in all three species since 1980. The researchers within the ASPA have noted recent, significant declines in chinstrap penguins (W. Trivelpiece, *pers. comm.*).

On King George Island as a whole, Woehler & Croxall (1996) note recent data suggesting a decrease in the Adélie penguin breeding population from approximately 33,000 pairs in 1980-91, to approximately 14,000 pairs in 1989-90. Since 1976 in Admiralty Bay, Adélie populations have been highly variable, but declined sharply after the late 1980s, and are 30% lower on average since 1990 than between 1976-88; recruitment rates have decreased at the same time (SCAR, 1996).

Seals. Weddell and southern elephant seals frequently haul-out on Half Moon Beach, and the elephant seal wallow at the end of Half Moon Beach builds in numbers as the summer progresses. In many seasons, Antarctic fur seals will haul-out on the moss and *Deschampsia* between the beach and the station.

Flora. *Deschampsia* and cushion moss beds are found between Half Moon Beach and the station. There are many crustose lichens spp. along the shore and extensive swards of *Usnea*, spp.

Conservation Aspects

Site sensitivities. All nesting penguins are within the boundary of the Antarctic Specially Protected Area, which is totally off limits. Patches of moss and grass near the beach are readily accessed and easily disturbed, but also, are totally off limits. No penguins nest along the visitor beach. Southern elephant seals frequent a wallow at the end of the visitor beach, and are easily approached and disturbed.

Pointers for avoiding disruptions.

- Stay on the visitor trail and do not enter the Antarctic Specially Protected Area.
- Avoid, stay clear of, and do not trample moss and grass patches near the visitor beach.
- Observe southern elephant seals and penguins within the boundary of the Antarctic Specially Protected Area from a distance.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	8	930
1990-91:	6	601
1991-92:	14	1,509
1992-93:	10	598
1993-94:	30	3,031
1994-95:	31	2,445
1995-96:	21	1,724
1996-97:	22	1,789
1997-98:	11	1,014
1998-99:	13	1,109
1999-2000:	22	1,901
2000-01:	7	688
2001-02:	9	655
2002-03:	12	1,766
14-Season Total	216	19,760

Proximate visitor sites. The Brazilian Ferraz Station is located across Admiralty Bay in Martel Inlet.

Baily Head (Rancho Point), Deception Island (BAIL)

62°58'S, 60°30'W

Magnetic declination: 13.0°E

Inventory subarea: SH

Inventory acronym: BAIL

Species Diversity: MEDIUM

Site Sensitivity: LOW

Location — History — Features

The derivation of the name “Baily” is unclear. Rancho Point is a conspicuous rock headland of 170 meters, marking the E extremity of Deception Island. The landing beach is an extraordinarily long, straight black-sand beach that extends nearly 7 kilometers along the E side of the island. Directly up against this beach is the ice cliff of Deception's E-side ice cap, which controls the shape of this beach. A stream with a substantial flow of water flows through a narrow gap between Baily Head and the ice cliffs. This stream drains a large, elongated, bowl-shaped valley (“amphitheater”) with hummocky topography. This valley, entirely on the outer slope of the Deception caldera, provides nesting territory for an estimated 100,000 pairs of chinstrap penguins. Within the penguin rookery, a soil up to several inches thick has formed on volcanic material, the thick guano, and other organic debris.

In early November the entire area may be covered with snow, which is deep in the lower parts of the valley, but relatively thin on the upper slopes. By December, all the snow may be gone, and the amphitheater of penguins becomes flush with a green swatch of *Prasiola crispa*. On these upper slopes, there is relatively little black, red, and gray pyroclastic debris from recent eruptions. The ice wall behind the 7-kilometer-long beach forms a substantial ridge along the E side of the island. The beach itself has a very steep face against the Bransfield Strait, which produces a heavy swell and surf and makes zodiac landings dangerous. The beach is made up of black and red pyroclastic material, mainly coarse ash and lapilli in size, and basaltic in composition. Along the nearby coast, there are several sea stacks, which appear to be erosional remnants of an offshore, eruptive center and cone. The primary rock is well-layered tuff. Back from the shore are more recent deposits of black ash, probably from Deception's recent eruptions. The penguin amphitheater appears to consist of lateral morainal material and ice. The ice at the lower end of the glacier is covered with substantial volcanic ash.

Also known as Rancho Point, the Baily Head colony of chinstrap penguins is located on the SE side of Deception Island. From the black sand landing beach that faces Livingston Island to the N, the chinstrap colony rises in an amphitheater toward a ridge line that is 150 feet or more above the surf below. A melt stream runs down through the amphitheater. There is a constant flow of many hundred penguins up and down along this route. The black, white, and brown geologic scenery is spectacular, and contrasts strikingly with the green *Prasiola* and the pink, guano-laden chinstrap colonies. An alternative landing beach lies below this high ridge, but should only be used by researchers who are properly permitted and skilled in moving without interference past hordes of chinstraps moving between the rim and the bay. This bay offers excellent zodiac cruising, and the chance to see leopard seals patrolling for chinstraps entering the sea.

Landing Characteristics

Zodiac landings at S end of long, black-sand beach forming SE side of Deception Island, crowded with chinstrap penguins moving back and forth, and prone to heavy swell and surf because the beach drops steeply into the sea. Large numbers of chinstrap penguins nest inland and uphill to the SW, within an impressive, bowl-shaped, volcanic valley rising to a high ridge line and drained by a substantial, often vigorously flowing, melt stream. May be extensive snow cover early (perhaps, into January); extensive guano, mud, and snow melt later; and at all times slippery.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	December 9, 1994	RN BH	Alla Tarasova
2.	December 14, 1994	RN BH	Livonia
3.	January 14, 1995	RN RD	Livonia
4.	November 18, 1995	BH	W. Discoverer
5.	November 29, 1995	RN LB	Explorer
6.	November 30, 1995	SF	W. Discoverer
7.	December 12, 1995	BH	W. Discoverer

8.	January 13, 1996	RN BH	Endurance
9.	January 27, 1996	RD RP	Livonia
10.	December 3, 1996	RN	W. Discoverer
11.	February 21, 1997	RN	Explorer
12.	December 3, 1997	RN SF	Explorer
13.	December 7, 1998	RN SF	Explorer
14.	January 12, 1999	RN SF	Endurance
15.	January 20, 1999	RD ST	Vavilov
16.	December 19, 1999	SF	Shuleykin
17.	January 11, 2001	SF	Cal Star
18.	January 24, 2001	RN RD	Cal Star
19.	January 26, 2001	RN RD	Cal Star
20.	January 17, 2002	RP WT	Endeavour
21.	February 18, 2002	RN	Endeavour
22.	December 8, 2002	RN	Endeavour
23.	December 30, 2002	RP	Endeavour
24.	January 9, 2003	SF	Endeavour
25.	January 22, 2003	RD	Endeavour
26.	February 2, 2003	MM	Endeavour
27.	February 15, 2003	MB	Endeavour

Assessment and monitoring. Surveyed and mapped. Terrestrial photodocumentation accomplished, more thorough aerial photodocumentation needed. Regular censusing of four staked chinstrap penguin groups at higher reaches of the site, which were originally staked by Dr. Wayne Trivelpiece and other researchers in 1992. More thorough ground survey of floral communities needed.

Fauna — Flora — Censuses

Penguins & flying birds. Chinstrap penguins, Antarctic brown skuas, and pintado petrels are confirmed breeders.

Recent census data reported in Woehler (1993) and Woehler & Croxall (1996): 100,000 N4/5, 1989, and a decrease in the overall chinstrap population at Deception Island between 1992-96.

Antarctic Site Inventory censuses:

Chinstrap penguin (group #7)

63	N1	1992 Dec
80	N1	1993 Dec
93	N1	1994 Dec
130	C1	1995 Jan
126	N1	1995 Nov
120	N1	1995 Dec
153	C1	1996 Jan
186	N1	1996 Dec
143	N1	1997 Dec
171	N1	1998 Dec
268	C1	1999 Jan
187	N1	1999 Dec
205	N1	2001 Jan
307	C1	2001 Jan
267	C1	2002 Jan
214	N1	2002 Dec
228	C1	2003 Jan
242	C1	2003 Feb

Chinstrap penguin (group #8)

205	N1	1992 Dec
200	N1	1993 Dec
189	N1	1994 Dec

173	C1	1995 Jan
257	C1	1995 Jan
233	N1	1995 Nov
219	N1	1995 Dec
245	C1	1996 Jan
230	N1	1996 Nov
220	N1	1997 Dec
229	N1	1998 Dec
326	C1	1999 Jan
223	N1	2001 Jan
361	C1	2001 Jan
252	C1	2002 Jan
252	N1	2002 Dec
269	C1	2002 Jan
289	C1	2003 Feb

Chinstrap penguin (group #9)

355	N1	1992 Dec
436	N1	1993 Dec
398	N1	1994 Dec
444	C1	1995 Jan
418	N1	1995 Nov
400	N1	1995 Dec
496	C1	1996 Jan
397	N1	1996 Dec
360	N1	1997 Dec
412	N1	1998 Dec
548	C1	1999 Jan
346	N1	1999 Dec
397	N1	2001 Jan
537	C1	2001 Jan
429	C1	2002 Jan
382	N1	2002 Dec
476	C1	2002 Jan
355	C1	2003 Feb

Chinstrap penguin (group #10)

560	N1	1992 Dec
572	N1	1993 Dec
458	N1	1994 Dec
571	C1	1995 Jan
552	N1	1995 Nov
519	N1	1996 Dec
556	N1	1997 Dec
492	N1	1998 Dec
881	C1	1999 Jan
541	N1	1999 Dec
524	C1	2002 Jan
684	C1	2003 Feb

Seals. Antarctic fur seals often haul-out along Baily Head's black beach in late spring and summer. Weddell, southern elephant, and crabeater seals also may haul-out on this beach.

Flora. Snow algae noted on the annual snow cover, which reveals extensive *Prasiola* once it begins to melt. Colorful crustose lichens may be found on the rocks along the upper reaches of the penguin amphitheater. Occasional moss, spp. patches also noted.

BAILY HEAD



Chinstrap penguins



Meltstream (1996)



Restricted zones

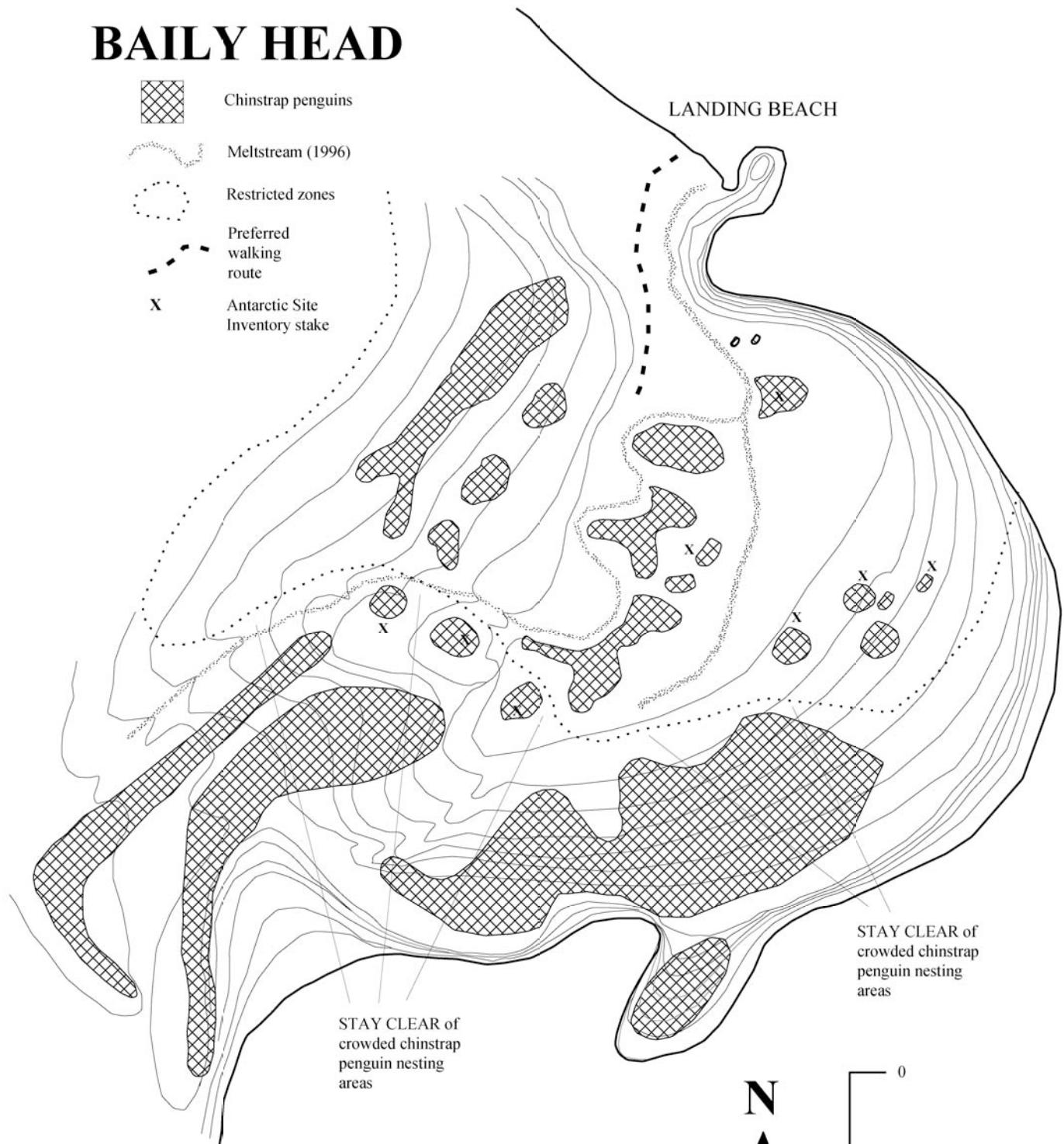


Preferred walking route

X

Antarctic Site Inventory stake

LANDING BEACH



STAY CLEAR of
crowded chinstrap
penguin nesting
areas

STAY CLEAR of
crowded chinstrap
penguin nesting
areas



150 metres
Contour intervals = 7.5 metres

BAILY HEAD



POINTERS FOR AVOIDING DISRUPTIONS

- WALK SLOWLY AND CAREFULLY AROUND — AND DO NOT INTERFERE WITH OR BLOCK — PENGUINS MOVING BACK AND FORTH ALONG THE MELT STREAM
- WALK SLOWLY AND CAREFULLY AROUND NESTING, CRÈCHING, OR MOLTING CHINSTRAP PENGUINS
- AVOID AND STAY CLEAR OF ANTARCTIC FUR SEALS, WHICH SHOULD BE GIVEN A WIDE BERTH AND SHOULD NOT BE APPROACHED
- STRICTLY CONTROL HIKES UPHILL INTO AND THROUGH THE AMPHITHEATER BY ORGANIZING SMALL GROUPS OF NO MORE THAN 20 VISITORS, WHICH ARE WELL SPACED, WITH ONE GUIDE PER GROUP, ALL FOLLOWING THE SAME PATH, AND NOT ALLOWING ANY FREE WANDERING

Conservation Aspects

Site sensitivities. Chinstrap penguins nest in large, tightly packed colonies scattered throughout this natural, volcanic amphitheater; they are easily approached and disturbed, especially in November and early December when adults will be incubating eggs; subsequently, adults will be guarding and provisioning chicks at the nest, then in crèche. Heavy congestion along the melt stream, with large numbers of penguins moving back and forth. The landing beach is favored by Antarctic fur seals, which increase in numbers through the season. Highest ridges are eroding and are heavily crevassed, in some cases, severely. Cliff edges are eroding and crumbling. Rock falls are evident.

Pointers for avoiding disruptions.

- Walk slowly and carefully around — and do not interfere with or block — penguins moving back and forth along the melt stream.
- Walk slowly and carefully around nesting, crèching, or molting chinstrap penguins.
- Avoid and stay clear of Antarctic fur seals, which should be given a wide berth and should not be approached.
- Strictly control hikes uphill into and through the amphitheater by organizing small groups of no more than 20 visitors, which are well spaced, with one guide per group, all following the same path, and not allowing any free wandering.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	5	455
1990-91:	6	584
1991-92:	14	1,182
1992-93:	10	657
1993-94:	9	990
1994-95:	32	2,576
1995-96:	19	1,094
1996-97:	14	1,133
1997-98:	20	1,493
1998-99:	20	2,012
1999-2000:	31	2,595
2000-01:	21	1,091
2001-02:	19	1,510
2002-03:	27	2,319
14-Season Total	247	19,691

Proximate visitor sites. The interior of Deception Island affords three other visitor landing sites: Whaler's Bay, Pendulum Cove, and Telefon Bay. Vapour Col is located on W, seaward side of the island.

Ferraz Station Vicinity, King George Island (FERR)

62°10'S, 58°48'W

Magnetic declination: 12.0°E

Inventory subarea: SH

Inventory acronym: FERR

Species Diversity: LOW

Site Sensitivity: LOW

Location — History — Features

This site is located in Martel Inlet, Admiralty Bay, and is the locus of the Brazilian research station, Commandante Ferraz. Martel Inlet was first charted by Charcot in 1909 and named for a French politician. The site is on morainal materials with a gently-sloping surface up onto the edge of a moraine, the top of which is perhaps 25-30 meters above sea level. The base itself is built upon a large lateral moraine, and there is a cemetery on the morainal hillside. Rock fragments in the moraine comprise several kinds of basaltic rocks with differing textures, likely reflecting the composition of volcanic rocks in higher reaches of the island. Near the shore and just beyond the main base buildings, there is a large outcrop of layered basalt. At the far end of the bay beyond the station, a rugged ice-fall at the base of a glacier reaches the sea. Across the bay, there is a massive lateral moraine rising as a ridge perhaps 150 meters above sea level, which suggests a considerable retreat by this glacier front in the recent geologic past. The volcanic origin of the South Shetland Islands and King George Island is evidenced by well-developed layering in the brown, gray, and black rocks around the bay. The surface may remain covered in snow well into the austral spring, though exposed morainal material may be muddy and soft. The rocky, pebbly beach is covered with whale bones from former whaling activities in this area. A whale skeleton (with bones from at least nine species of whales) has been “reassembled” on a moss bed a short distance from the station.

Landing Characteristics

Easy landings by zodiac on the cobble beach in front of the station. At this site, there are relatively few faunal attractions, though the tidepools on site often provide excellent views of invertebrates. The whale skeleton is a bit of a tourist attraction, though the bones derive from many species. Many tour ships conduct zodiac tours in Martel Inlet to view humpback whales that often summer in Admiralty Bay, when krill is abundant. Krill often washes up on the station’s beaches.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1. November 28, 1995 BH SF W. Discoverer

Assessment and monitoring. None by the Inventory. These tasks presumably accomplished by base personnel.

Fauna — Flora — Censuses

Penguins & flying birds. Antarctic terns nest in the vicinity of the reassembled whale skeleton. No site-specific penguin breeding populations are listed in Woehler (1993) or Woehler & Croxall (1996).

Seals. None noted.

Flora. There are extensive moss beds, spp. above and behind the station and the inlet.

Conservation Aspects

Site sensitivities. Moss beds behind and near the station are easily accessed. Antarctic terns nest near the station and are easily disturbed.

Pointers for avoiding disruptions.

- Stay clear of — and do not hike or wander — where terns are nesting.
- Watch footsteps carefully, especially when snow cover is absent, to avoid trampling moss.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	3	305
1990-91:	1	95

	Zodiac Landings	Participating Visitors
1991-92:	6	660
1992-93:	2	187
1993-94:	12	1,135
1994-95:	10	930
1995-96:	4	321
1996-97:	3	183
1997-98:	5	693
1998-99:	4	381
1999-2000:	5	387
2000-01:	1	27
2001-02:	1	102
2002-03:	3	228
14-Season Total	60	5,634

Proximate visitor sites. The Polish Arctowski Base is located to the S across Admiralty Bay from Martel Inlet.

Fort Point, Greenwich Island (FORT)

62°34'S, 59°34'W

Magnetic declination: 12.2°E

Inventory subarea: SH

Inventory acronym: FORT

Species Diversity: HIGH

Site Sensitivity: MODERATE

Note: Restricted visitor space

Location — History — Features

Rocky point, 85 meters high, forming the SE extremity of Greenwich Island. The highest rock on the seaward end of the point was initially named Castle Rock; Fort Rock was recommended in 1954 to avoid confusion with a Castle Rock at nearby Snow Island

Landing Characteristics

Uncharted water near shore. Hazardous rocks along the shoreline may be exposed, depending on the tide. Landing on narrow, elevated, rocky beach that forms SE extremity of Greenwich Island and is totally exposed to the elements. Extensive glacier inland. Loose scree slopes above the penguin colonies. Many kelp gulls, Antarctic terns, blue-eyed shags, Antarctic fulmars, snowy sheathbills, and Wilson's storm-petrels swirling above and around the high, seaward stacks and cliffs, which cannot be accessed safely. Large numbers of fur seals, high swell, or both, may prevent landings, in which case the site is best viewed by zodiac.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	December 13, 1999	RN	Cal Star
2.	February 1, 2001	RN	Cal Star

Assessment and monitoring. This site has not been regularly visited by the Inventory, and only preliminary surveying, mapping, censusing, and terrestrial photodocumentation have been accomplished.

Fauna — Flora — Censuses

Penguins & flying birds. Chinstrap, gentoo, and macaroni penguins are confirmed breeders. Kelp gull, Antarctic tern, Antarctic fulmar, blue-eyed shag, snowy sheathbill, and Wilson's storm-petrel have been observed and are likely breeding.

Antarctic Site Inventory censuses:

Chinstrap penguin
853 N1 1999 Dec

Gentoo penguin
282 N1 1999 Dec

Macaroni penguin
1 N1 1999 Dec

The Inventory census in December 1999 totaled 1,136 nests of three penguin species. Recent historic chinstrap penguin census reported in Woehler (1993): 1,200 N4, 1987.

Seals. Southern elephant, Weddell, and Antarctic fur seals hauled-out on rocky beach.

Flora. *Xanthoria*, spp., *Haematomma*, spp., *Caloplaca*, spp., and patches of moss, spp., noted.

Conservation Aspects

Site sensitivities. Chinstrap, gentoo, and a few macaroni penguins nesting on the point (many on uphill slopes) are easily approached and disturbed, especially in November and early December when adults will be incubating eggs; subsequently, adults will be guarding and provisioning chicks at the nest, then in crèche.

Pointers for avoiding disruptions.

- Walk slowly and carefully around nesting, crèching, or molting penguins.
- Avoid and stay clear of Antarctic fur seals, which should be given a wide berth and should not be approached.

- If seals are numerous, or with high swell or surf, zodiac tours are the best way to view the site.
- Stay clear of — and do not allow any hiking or free wandering over — scree slopes and seaward stacks and cliffs.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-98:	0	0
1998-99:	2	185
1999-2000:	2	131
2000-01:	0	0
2001-02:	0	0
2002-03:	0	0
14-Season Total	4	316

Proximate visitor sites. Yankee Harbor, also on Greenwich Island; Robert Point and Mitchell Cove on Robert Island; the Aitcho Islands; and Half Moon Island.

Half Moon Island (HALF)

62°36'S, 59°55'W

Magnetic declination: 12.5°E

Inventory subarea: SH

Inventory acronym: HALF

Species Diversity: MEDIUM

Site Sensitivity: LOW

Note: Restricted visitor space

Location — History — Features

A 1.25-mile-long, crescent-shaped island lying in the entrance to Moon Bay on the E side of Livingston Island. The island was known by sealers as early as 1821. The Argentine Camara Station is located on the island's SW side.

Half Moon is the site of the Argentine Camara Station, and at one point was the locus for a joint tourism impact study run by U.K., Argentine, and Chilean interests. Station personnel and biologists from the Argentine Antarctic Institute continue to monitor the island's penguin and flying bird populations. From the regular landing beach on the NE shore, marked by a rotting old dory, it is necessary to climb toward a navigation tower on the ridge above in order to reach the pathway leading to the major chinstrap colonies on the E extremity of the island. There may be heavy snow cover, which makes hiking difficult. On the pathway to the E spit, Wilson's storm-petrels, Antarctic terns, sheathbills, and kelp gulls may be encountered.

Landing Characteristics

Landing beach on NE side strewn with cobble, algae, and a derelict dory. Access is uphill and slippery. Visitor space restricted by difficult terrain, snow cover (which may be extensive), and numbers of penguins tramping well-worn paths, moving to and from the water. The Argentine Camara Station lies W-SW of the landing beach. The beach on the far NE side may be accessed by hiking E from the dory beach, winding uphill and over ridges; in heavy snow, hiking is difficult.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	December 6, 1994	RN BH	Alla Tarasova
2.	November 29, 1995	BH	W. Discoverer
3.	December 15, 1995	LB	Explorer
4.	December 2, 1996	RN SF	W. Discoverer
5.	November 26, 1998	RN SF	Explorer
6.	January 22, 2000	RN	Shuleykin

Assessment and monitoring. This site has not been frequently visited by the Inventory. Preliminary surveying, mapping, censusing, and photodocumentation have been accomplished.

Fauna — Flora — Censuses

Penguins & flying birds. Confirmed nesting species include chinstrap penguins, blue-eyed shags, Wilson's storm-petrels, kelp gulls, snowy sheathbills, Antarctic tern, and Antarctic brown skua.

Recent (1995) surveys indicate a minimum breeding population of 3,342 pairs of chinstrap penguins, an increase from 2,500 pairs counted in 1987 (Woehler & Croxall, 1996).





Seals. Southern elephant, Weddell, and Antarctic fur seals regularly haul-out on Half Moon's beaches.

Flora. Crustose lichens, spp. noted.

Conservation Aspects

Site sensitivities. Chinstrap penguins nesting above the landing beach and to the E are easily approached and disturbed, especially in November and early December when adults will be incubating eggs; subsequently, adults will be guarding and provisioning chicks at the nest, then in crèche. If snow cover is heavy, visitor space is restricted further. Kelp gulls nesting immediately E of the landing beach, and at other scattered locations, are easily approached and disturbed; in November and early December adults will be incubating eggs and, subsequently, guarding and provisioning chicks.

HALF MOON ISLAND

-  Chinstrap penguins
-  Blue-eyed shags
-  Kelp gull nest
-  Preferred walking route

Antarctic Terns
Snowy Shearwaters

LANDING
BEACH

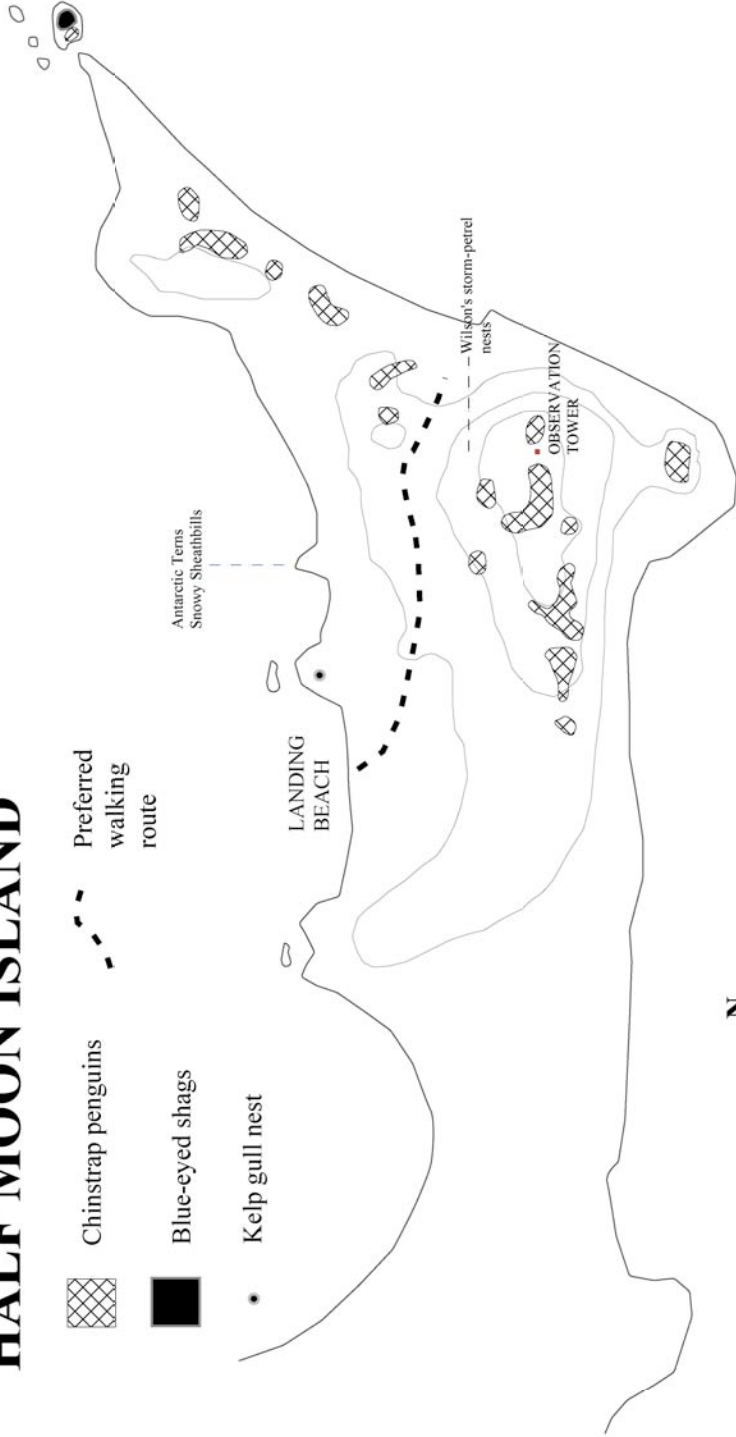
Wilson's storm-petrel
nests

OBSERVATION
TOWER



0
500 feet (152 meters)
Contour intervals = 25 feet (7.6 meters)

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purposes only.



Antarctic terns nesting opportunistically on available, open ground are skittish, defensive, and very easily disturbed, even from a distance. Blue-eyed shags nesting on the far E tip are easily approached and disturbed; in November and December adults will be incubating eggs and, subsequently, guarding and provisioning chicks. Wilson's storm-petrels nest in loose scree. Antarctic fur seals frequently haul-out on the far NE beach.

Pointers for avoiding disruptions.

- Walk slowly and carefully around nesting, crèching, or molting chinstrap penguins.
- If extensive snow cover, avoid — and do not walk in or block — trails that penguins have made through the snow.
- Avoid and stay clear of kelp gull nests.
- Walk slowly and carefully — and stay well clear — of nesting terns.
- Avoid and stay clear of Antarctic fur seals, which should be given a wide berth and should not be approached.
- Stay clear of — and do not hike upon or wander over — scree slopes.
- Strictly control hikes to the NE end by organizing guided groups, all following the same path, and not allowing any free wandering.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	10	1,191
1990-91:	9	1,011
1991-92:	25	2,984
1992-93:	14	1,585
1993-94:	17	2,961
1994-95:	38	3,017
1995-96:	49	5,221
1996-97:	35	2,258
1997-98:	33	4,382
1998-99:	33	3,931
1999-2000:	46	1,454
2000-01:	33	5,711
2001-02:	41	5,317
2002-03:	38	5,413
14-Season Total	421	46,436

Proximate visitor sites. Yankee Harbor and Fort Point on Greenwich Island; Robert Point and Mitchell Cove on Robert Island; and the Aitcho Islands.

Hannah Point, Livingston Island (HANN)

62°39'S, 60°37'W

Magnetic declination: 13.0°E

Inventory subarea: SH

Inventory acronym: HANN

Species Diversity: HIGH

Site Sensitivity: HIGH

Note: Restricted visitor space.

Location — History — Features

This point forms the E side of the entrance to Walker Bay on the S coast of Livingston Island. It is named after the sealing vessel *Hannah* of Liverpool, which visited the South Shetland Islands and wrecked on this site in 1820. The regular landing site is a small, steep-faced, pocket beach about 50 meters wide. The beach rises to the ridge of a narrow isthmus between very steep, pointed peaks. W of this beach, the land surface slopes upward along a more-or-less planar surface to a knife-edged ridge on the N edge of this peninsula, from which nearly vertical sea cliffs plunge to the sea, 30-50 meters below. A narrow beach stretches along the base of these cliffs. The shingle beach at the landing site and the N beach below the southern giant petrel ridge are composed of dark, rounded, fine-grained basaltic cobbles and pebbles. The ground to the W is basaltic, and covered extensively with *Prasiola crispa*, which yields a green background to the extensive gentoo penguin colony found between the landing beach and inner Walker Bay. There are several round-bottomed gullies, deep in sandy and muddy material, along these upward slopes. The slopes appear to be eroding. Above the landing beach is an obvious jasper spur. The upper slopes are littered with limpet shells, presumably dropped by the resident, nesting kelp gulls.

Easily observed, nesting macaroni penguins, which are rare in the Antarctic Peninsula, but relatively common at Elephant Island and extraordinarily abundant at South Georgia.

Landing Characteristics

Uncharted water near shore. Hazardous rocks along the shoreline toward inner Walker Bay may be exposed, depending on the tide. Narrow and exposed landing beach crowded with wildlife, prone to swells in moderate to high W-NW wind. Very restricted visitor space on the beach and at higher elevations because of topography and high biological density. Much erosion and loose scree on higher slopes, ridges. Cliff edges eroding and crumbling.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	December 9, 1994	RN BH	Alla Tarasova
2.	January 23, 1995	RN RD	Explorer
3.	November 18, 1995	RN LB	Explorer
4.	November 30, 1995	BH	W. Discoverer
5.	December 12, 1995	BH	W. Discoverer
6.	January 27, 1996	RD RP	Livonia
7.	December 3, 1996	RN SF	W. Discoverer
8.	January 30, 1997	LB	Hanseatic
9.	December 3, 1997	RN SF	Explorer
10.	December 7, 1998	RN SF	Explorer
11.	December 18, 1999	RN	Cal Star
12.	January 14, 2000	SF	Cal Star
13.	January 18, 2000	RD	Explorer
14.	January 25, 2000	RN	Shuleykin
15.	December 15, 2000	RN	Cal Star
16.	December 30, 2000	SF LF	Cal Star

Assessment and monitoring. Surveyed, mapped, and photodocumented (aerial and terrestrial). Regular, site-wide censusing of gentoo, chinstrap (in 12 groups), and macaroni penguins, southern giant petrels, and blue-eyed shags. More thorough ground-survey of floral communities needed.

Fauna — Flora — Censuses

Penguins & flying birds. Confirmed nesting species include chinstrap, gentoo, and macaroni penguins, blue-eyed shag, snowy sheathbill, kelp gull, pintado petrel, skuas, spp., and southern giant petrel. Antarctic terns nest elsewhere in Walker Bay. Wilson's storm-petrels have been observed on the higher slopes and presumably breed.

Historic censuses reported in Woehler (1993) include: gentoo penguin, 1,016 N1, 1987; chinstrap penguin, 1,500 N3, 1987; and macaroni penguin, 8 N1, 1987.

Antarctic Site Inventory censuses:

Chinstrap penguin (total, 12 groups, site-wide)

1,158	N1	1996 Dec
1,137	N1	1997 Dec
1,061	N1	1999 Dec
1,341	C1	2000 Jan
1,045	N1	2000 Dec

Gentoo penguin (site-wide)

1,123	N1	1996 Dec
1,350	N1	1997 Dec

Macaroni penguin (site-wide, found nesting in chinstrap penguin groups)

8	N1	1995 Nov
6	N1	1995 Dec
6	N1	1996 Dec
6	N1	1997 Dec
5	N1	1999 Dec
3	C1	1995 Jan
4	C1	1996 Jan
3	C1	2000 Jan
4	N1	2000 Dec

Southern giant petrel (site-wide)

117	N1	1997 Dec
110	N1	1999 Jan
126	N1	1999 Dec
111	N1	2000 Jan
123	N1	2000 Dec

Blue-eyed shag (small colony at W end)

10	N1	1994 Dec
7	N1	1995 Nov
5	N1	1995 Dec
5	N1	1996 Dec
7	N1	1997 Dec
5	N1	1998 Dec
7	N1	1999 Dec
5	N1	2000 Jan
2	C1	1999 Dec
8	C1	2000 Jan
9	C1	2000 Jan
3	N1	2000 Dec

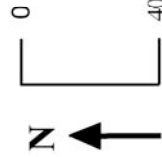
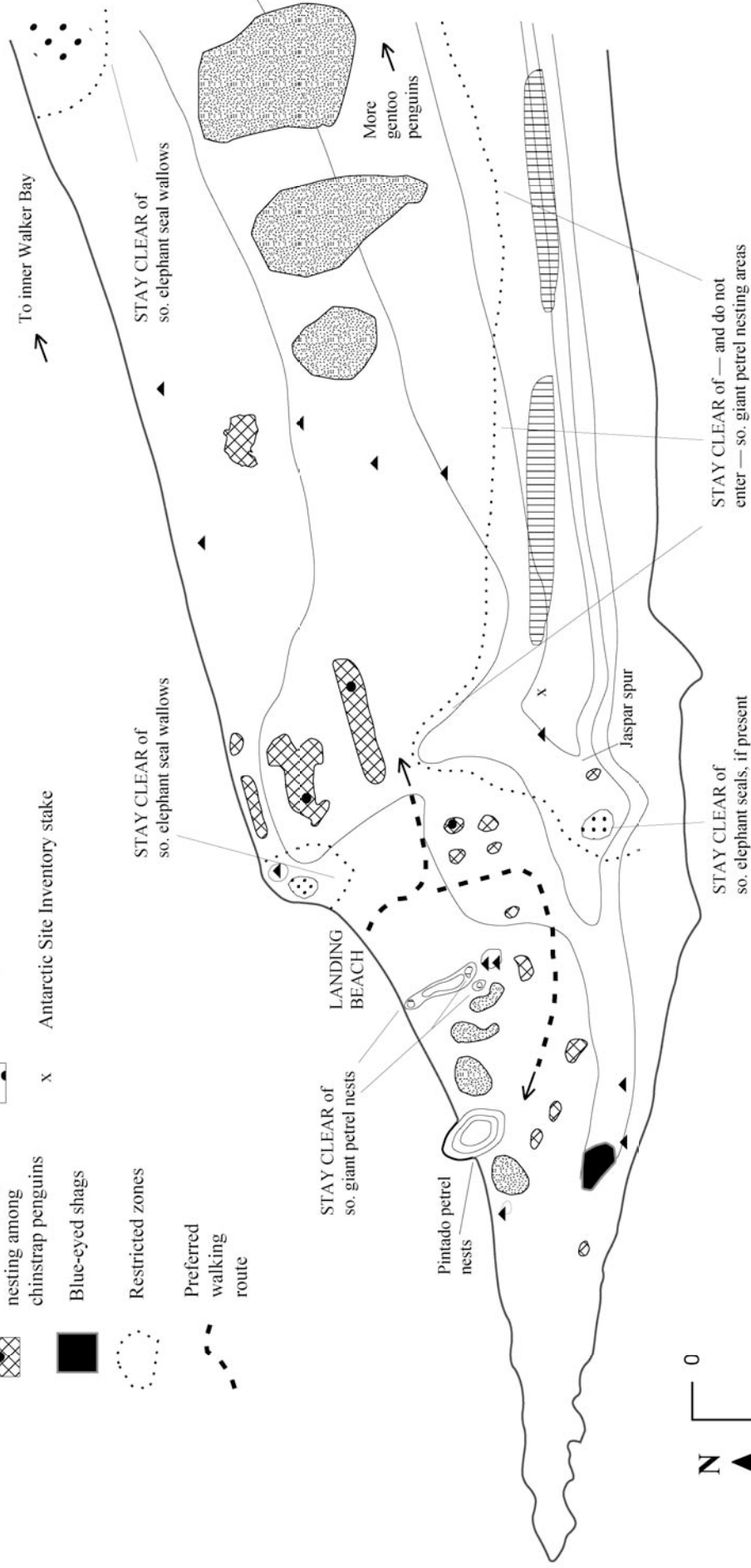
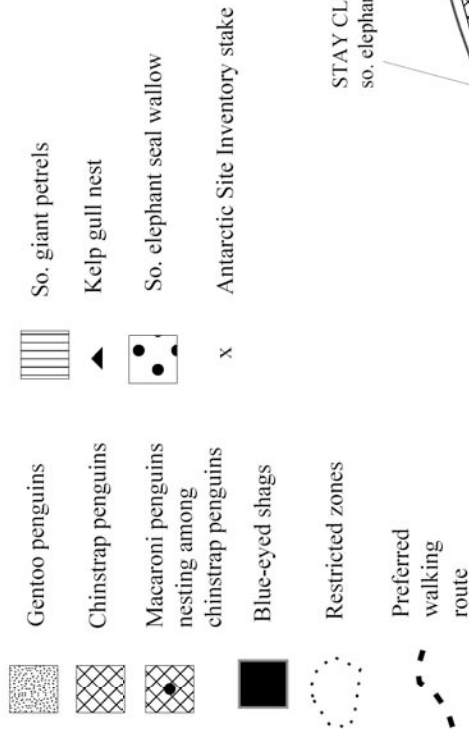
Seals. The site presents a few, regularly occupied southern elephant seal wallows, and its beaches occasionally have hauled-out Weddell and Antarctic fur seals.

Flora. *Prasiola* is extensive. *Xanthoria*, spp. and other crustose lichens adorn many rocks and outcrops, and there are patches of *Colobanthus* and *Deschampsia*.

Conservation Aspects

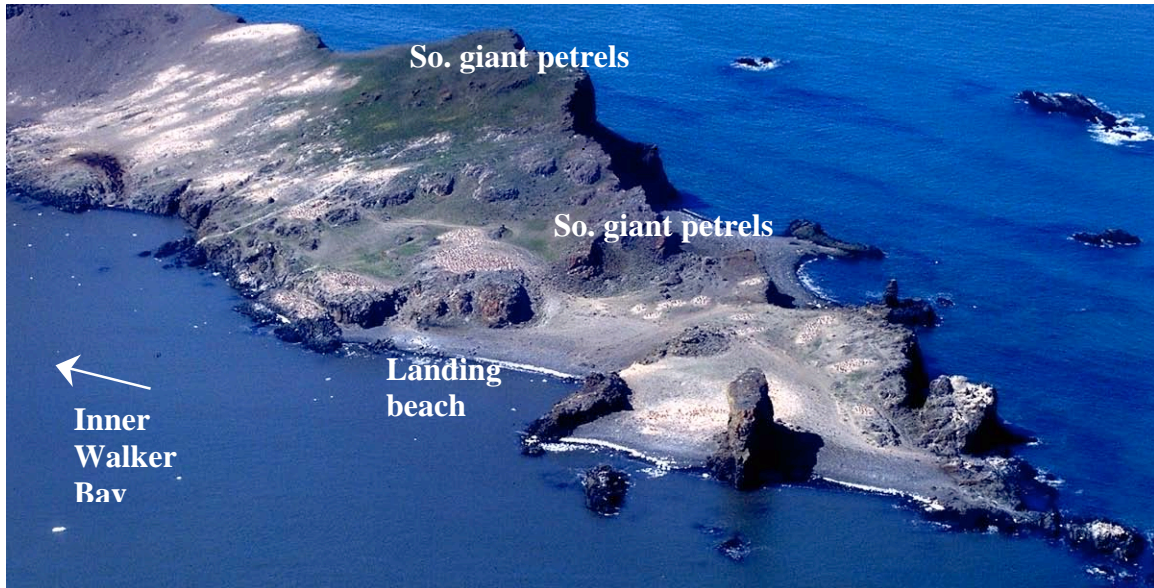
Site sensitivities. Very restricted visitor space on the landing beach, where numbers of penguins are moving back and forth, and on higher ground above and immediately E and W of the beach, where penguins nest in densely packed colonies. Nesting chinstrap, gentoo, and macaroni penguins are easily approached and disturbed, especially in November and early December when adults will be incubating eggs; subsequently, adults will be guarding and provisioning chicks at the nest, then in crèche.

HANNAH POINT



Contour intervals = 5 metres

HANNAH POINT



POINTERS FOR AVOIDING DISRUPTIONS

- STRICTLY CONTROL LANDINGS WITH SMALL GROUPS OF NO MORE 20 VISITORS, WHICH ARE WELL SPACED, WITH ONE GUIDE PER GROUP, FOLLOWING THE SAME PATH, AND NOT ALLOWING ANY FREE WANDERING
- ALTERNATIVELY, MAKE ZODIAC LANDINGS FURTHER E, BEYOND THE MAIN ELEPHANT SEAL WALLOW, TOWARD INNER WALKER BAY
- DO NOT IMPEDE PENGUINS' ACCESS TO AND FROM THE WATER
- WALK SLOWLY AND CAREFULLY AROUND NESTING, CRÈCHING, OR MOLTING PENGUINS
- AVOID AND STAY CLEAR OF NESTING SOUTHERN GIANT PETRELS
- STAY CLEAR OF — AND DO NOT HIKE UPON OR WANDER OVER — RIDGES, SCREE SLOPES, AND CLIFF EDGES
- WALK SLOWLY AND CAREFULLY AROUND NESTING SHEATHBILLS
- AVOID AND STAY CLEAR OF WALLOWING SOUTHERN ELEPHANT SEALS
- AVOID AND STAY CLEAR OF ANTARCTIC FUR SEALS, WHICH SHOULD BE GIVEN A WIDE BERTH AND SHOULD NOT BE APPROACHED

Southern giant petrels within 100 meters of the landing beach and on slopes and ridges above and E of the landing beach are easily approached and disturbed; in November and December they will be incubating eggs. Kelp gulls on widely scattered nests are easily approached and disturbed; in November and early December adults will be incubating eggs and, subsequently, guarding and provisioning chicks.

Blue-eyed shags on the far W point are easily approached and disturbed; in November and early December adults will be incubating eggs and, subsequently, guarding and provisioning chicks. Skuas nesting on widely scattered territories at higher elevations are easily approached and disturbed, particularly, later in the season (from mid-January) when adults are fiercely protecting young. Snowy sheathbills nesting in rock caves and crevices are easily approached and disturbed. Wallowing southern elephant seals E of the narrow landing beach (occasionally, among the penguins) are easily approached and disturbed. Antarctic fur seals may be found on the beach and among the penguins.

Pointers for avoiding disruptions.

- Strictly control landings on the narrow, exposed beach by organizing small groups of no more than 20 visitors, which are well spaced, with one guide per group, all following the same path, and not allowing any free wandering.
- Alternatively, make zodiac landings further E, beyond the main elephant seal wallow, toward inner Walker Bay.
- Do not impede penguins' access to and from the water.
- Walk slowly and carefully around nesting, crèching, or molting penguins.
- Avoid and stay clear of nesting southern giant petrels.
- Stay clear of — and do not hike upon or wander over — ridges, scree slopes, and cliff edges.
- Walk slowly and carefully around nesting sheathbills.
- Avoid and stay clear of wallowing southern elephant seals.
- Avoid and stay clear of Antarctic fur seals, which should be given a wide berth and should not be approached.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	3	419
1990-91:	2	192
1991-92:	17	1,632
1992-93:	23	1,542
1993-94:	29	2,740
1994-95:	46	4,010
1995-96:	37	3,048
1996-97:	46	3,480
1997-98:	39	3,399
1998-99:	48	3,982
1999-2000:	54	1,691
2000-01:	53	4,752
2001-02:	37	2,927
2002-03:	46	4,096
14-Season Total	480	37,910

Proximate visitor sites. Half Moon Island is located to the N, between Livingston Island and Greenwich Island.

Jubany Station Vicinity, King George Island (JUBA)

62°14'S, 58°38'W

Magnetic declination: 12.0°E

Inventory subarea: SH

Inventory acronym: JUBA

Species Diversity: LOW

Site Sensitivity: LOW

Location — History — Features

This Argentine Research Station is located in Potter Cove, which indents the NW side of King George island to the E of Barton Peninsula. The cove was known to sealers as early as 1821. A prominent geological feature in the vicinity is Three Brothers Hill, 210 meters tall, which is very conspicuous and is the remaining portion of an extinct volcano that once existed on the E side of Potter Cove. On site is an Historic Site and Monument, a metal plaque erected by Eduard Dallman to commemorate the visit of his German expedition on March 1, 1874.

Landing Characteristics

Mostly a station visit, though some wildlife, and particularly southern elephant seals, may be readily observed.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1. November 20, 1995 BH SF W. Discoverer

Assessment and monitoring. None by the Inventory. These tasks presumably accomplished by base personnel.

Fauna — Flora — Censuses

Penguins & flying birds. Kelp gulls and Wilson's storm-petrels are confirmed breeders. No site-specific penguin breeding populations are listed in Woehler (1993) or Woehler & Croxall (1996).

Seals. Southern elephant seals are regularly hauled-out in Potter Cove.

Flora. Not surveyed during brief Inventory visit.

Conservation Aspects

Site sensitivities. Close proximity to nearby, Potter Cove Antarctic Specially Protected Area. (ASPA).

Pointers for avoiding disruptions.

- Do not enter the Antarctic Specially Protected Area.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	1	120
1990-91:	1	107
1991-92:	3	307
1992-93:	4	305
1993-94:	6	869
1994-95:	3	403
1995-96:	0	0
1996-97:	0	0
1997-98:	3	333
1998-99:	6	232
1999-2000:	3	268
2000-01:	1	132
2001-02:	1	96
2002-03:	6	363
14-Season Total	38	3,535

Proximate visitor sites. Jubany is close to Maxwell Bay, where many other science stations are located.

Mitchell Cove, Robert Island (MITC)

62°24'S, 59°40'W

Magnetic declination: 13.5°E

Inventory subarea: SH

Inventory acronym: MITC

Species Diversity: MEDIUM

Site Sensitivity: LOW

Location — History — Features

Cove on NW end of Robert Island.

Landing Characteristics

Cobble landing beach, with fragile substrate and glacial silt moraine.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	December 26, 2001	JC LGC	Endeavour
2.	January 6, 2002	RP	Endeavour
3.	December 29, 2002	RP	Endeavour
4.	January 8, 2003	SF	Endeavour

Assessment and monitoring. Only preliminary surveying and censusing have been accomplished.

Fauna — Flora — Censuses

Penguins & flying birds. South polar and Antarctic brown skua, Wilson's storm-petrel, and Antarctic terns are confirmed breeders. Kelp gulls observed, but nests not observed. Chinstrap, gentoo, and Adélie penguins observed wandering on the beach, but not observed nesting.

Seals. None observed.

Flora. Dense beds of moss, spp. both on lower slopes and higher elevations. Dense patches of *Usnea*, spp. at higher elevations.

Conservation Aspects

Site sensitivities. Substrate is fragile, requiring walking and hiking in melt streams. Dense moss beds and lichens patches. Antarctic terns

Pointers for avoiding disruptions.

- Watch footsteps carefully, especially when snow cover is absent, to avoid trampling moss and lichens.
- Stay clear of — and do not hike near — areas where terns are nesting.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
14-Season Total, 1989-2003	0	0

Note: Inventory researchers visited this site twice from a tour ship during the 2001-02 season; however, these landings are, inexplicably, not listed in the NSF compilations.

Proximate visitor sites. Yankee Harbor and Fort Point on Greenwich Island; Robert Point and Mitchell Cove on Robert Island; and the Aitcho Islands.

Pendulum Cove, Deception Island (PEND)

62°56'S, 60°36'W

Magnetic declination: 13.2°E

Inventory subarea: SH

Inventory acronym: PEND

Species Diversity: LOW

Site Sensitivity: LOW

Location — History — Features

The cove is located on the NE side of Port Foster, Deception Island, and its name relates to pendulum and magnetic observations made by a British expedition in 1829. The flat, black sand beach slopes gently offshore and forms a distinct beach ridge. From the beach the ground slopes gently up to the Chilean research station that was destroyed during the 1967 eruption. The ground behind the ruins of the old station rises abruptly to the inner caldera wall, which at this point is mostly covered with glacial ice from the E rim ice cap. A substantial hill to the E is covered with ash and cinders that are deeply gullied. An Antarctic Specially Protected Area (ASPA) is located here, and is intended to protect rare bryophytes (mosses), but its boundary is not clearly marked and is merely described as beginning at the high tide line. The beach is entirely composed of loose cinders, with no soil, and is used by visiting ships to conduct brief, Antarctic swims. There may be yellow algae and boiled krill floating on the surface, and the steam rising from the beach often is laced with sulfurous odor. The beach is deeply gullied by melt-water streams, and erosion appears to be progressing at a rapid rate.

Landing Characteristics

Expedition companies often bring visitors to this site to swim where cold bay water mixes with volcanically heated water at the shoreline.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	December 12, 1995	BH SF	W. Discoverer
2.	December 29, 1995	RN LB	Explorer
3.	December 18, 1999	RN	Cal Star

Assessment and monitoring. Preliminary surveying, censusing, and photodocumentation have been accomplished.

Fauna — Flora — Censuses

Penguins & flying birds. No species recorded as nesting. Antarctic terns may visit, however, to pluck boiled krill and other invertebrates from the shore edge. No site-specific penguin counts are listed in Woehler (1993).

Seals. None.

Flora. None observed. Access to the ASPA, where rare bryophytes are located, is prohibited.

Conservation Aspects

Site sensitivities. Close proximity to nearby Antarctic Specially Protected Area (ASPA) where rare bryophytes are located. Entry is prohibited, but the ASPA boundary is ill defined.

Pointers for avoiding disruptions.

- Do not enter the ASPA.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	7	587
1990-91:	10	1,215
1991-92:	19	2,011
1992-93:	23	1,936
1993-94:	33	3,159
1994-95:	41	2,803
1995-96:	42	3,492

	Zodiac Landings	Participating Visitors
1996-97:	44	2,725
1997-98:	31	3,426
1998-99:	50	4,676
1999-2000:	57	5,300
2000-01:	45	4,211
2001-02:	47	4,994
2002-03:	42	2,447
14-Season Total	491	42,982

Proximate visitor sites. Two other, regular visitor sites may be found within Port Foster: Whaler's Bay and Telefon Bay. Vapour Col is located on W, seaward side of the island, Baily Head on the SE, seaward side.

Penguin Island (PENG)

62°06'S, 57°54'W

Magnetic declination: 11.0°E

Inventory subarea: SH

Inventory acronym: PENG

Species Diversity: HIGH

Site Sensitivity: HIGH

Location — History — Features

This is a 1.0-mile-long island lying close to the S coast of King George Island, which marks the E side of the entrance to King George Bay. It was first sighted in 1820 by the British expedition under Bransfield's command, and named by him for the penguins observed on shore.

Looming tall is the dormant caldera of Deacon Peak, the 170-meter high summit of the island. Many visitors hike to this summit, and to do so will traverse through areas where Antarctic terns breed. On the high knolls S of the landing beach, there are extensive moss beds, many *Usnea* patches, and some abandoned giant petrel nests.

Landing Characteristics

Uncharted water near shore. Hazardous rocks along the shoreline may be exposed, depending on the tide. Broad cobble landing beach on the N coast, which may be packed with ice depending on wind and swell; difficult to negotiate when snow-covered or wet, and especially if Antarctic fur seals are present. Easiest inland access is toward the E and uphill, but immediately places visitors in close proximity of nesting southern giant petrels.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	January 12, 1995	RN RD	Livonia
2.	November 17, 1995	RN LB	Explorer
3.	November 28, 1995	BH SF	W. Discoverer
4.	December 11, 1995	BH	W. Discoverer
5.	January 12, 1996	RN BH	Endurance
6.	November 30, 1996	RN SF	W. Discoverer
7.	November 26, 1997	RN SF	W. Discoverer
8.	December 1, 1997	RN SF LS MB	Explorer
9.	December 9, 1998	RN SF	Explorer
10.	January 12, 1999	RN SF	Endurance
11.	January 19, 1999	RD ST	Vavilov
12.	December 15, 1999	SF	Shuleykin

Assessment and monitoring. Surveyed, mapped, and photodocumented (aerial and terrestrial). Regular censusing of Adélie and chinstrap penguin groups on the southern end of the island, and of southern giant petrels, site-wide. Adélie and chinstrap penguins on the southern end appear to have considerable integrity as control groups because of their far proximity from the regular landing beach and, likely, visitor absence. Abandoned southern giant petrel nests on the N end suggest an opportunity for paleontological research. More thorough censusing of nesting kelp gulls and skuas needed. More thorough ground survey of floral communities needed. Because of extensive, easily accessed moss beds, a degradation study seems appropriate and necessary.

Fauna — Flora — Censuses

Penguins & flying birds. Chinstrap penguins, southern giant petrels, Antarctic terns, skuas, spp., and kelp gulls are confirmed breeders. Snowy sheathbills have been noted, but no nests were discovered. Blue-eyed shags may be found roosting on offshore rocks. Adélie penguins nest on the southern side of the island, away from the visitor traffic. Storm-petrels, spp. observed at higher reaches and presumably breed.

Recent historic censuses reported in Woehler (1993): chinstrap penguin, 7,581 N1/3, 1980 and Adélie penguin 3,114 N1/3, 1980.

Antarctic Site Inventory censuses:

Adélie penguin (site-wide)

1,966 N1 1996 Nov

2,441 N1 1997 Dec

Southern giant petrel (site-wide)		
507	N1	1997 Dec
578	N1	1998 Dec
439	N1	1999 Jan
634	N1	1999 Dec

Seals. Southern elephant, Weddell, and Antarctic fur seals regularly haul-out on the landing beach.

Flora. *Deschampsia*; *Colobanthus*; *Xanthoria elegans*, *Caloplaca*, spp., and other crustose lichens; patches of fruticose lichens, *Usnea antarctica*; and extensive beds of cushion moss, spp. are present.

Conservation Aspects

Site sensitivities. Southern giant petrels nesting along the entire N coast and around and near the eroding crater to the E are easily approached and disturbed; many unoccupied nests are evident; in November and early December adults will be incubating eggs. Chinstrap penguins nesting along this eroding crater are easily approached and disturbed, especially in November and early December when adults will be incubating eggs; subsequently, adults will be guarding and provisioning chicks at the nest, then in crèche.

Scientific control groups of chinstrap and Adélie penguin colonies on the SE end of the island. Skuas nesting on widely scattered territories are easily approached and disturbed, particularly later in the season (from mid-January) when adults are fiercely protecting young. Kelp gulls nesting at widely scattered locations are easily approached and disturbed; in November and early December adults will be incubating eggs and, subsequently, guarding and provisioning chicks. Antarctic terns nesting opportunistically to the W and inland on available, open ground are skittish, defensive, and very easily disturbed, even from a distance.

Toward the interior, extensive patches of moss and *Usnea* lichens are readily accessed and easily may be trampled. Antarctic fur seals may be found on the cobble beach, among the penguins and giant petrels, and inland — and in large numbers. Higher slopes, including the route to Deacon Peak, are eroding, and storm-petrel nests in the high scree may be trampled.

Pointers for avoiding disruptions.

- Avoid and stay clear of southern giant petrels nesting along the N coast and NE crater.
- Walk slowly and carefully around nesting, crèching, or molting penguins.
- Avoid and stay clear of skua territories and nesting kelp gulls.
- Stay clear of — and do not hike or wander to — the W side, where terns are nesting.
- Watch footsteps carefully, especially when snow cover is absent, to avoid trampling moss and lichens.
- Avoid and stay clear of Antarctic fur seals, which should be given a wide berth and should not be approached.
- Stay clear of — and do not hike upon or wander over — scree slopes.
- Strictly control hikes to Deacon Peak by organizing guided groups, all following the same path, and not allowing any free wandering.
- Avoid chinstrap and Adélie penguin control colonies on the SE end.

Visitation Aspects

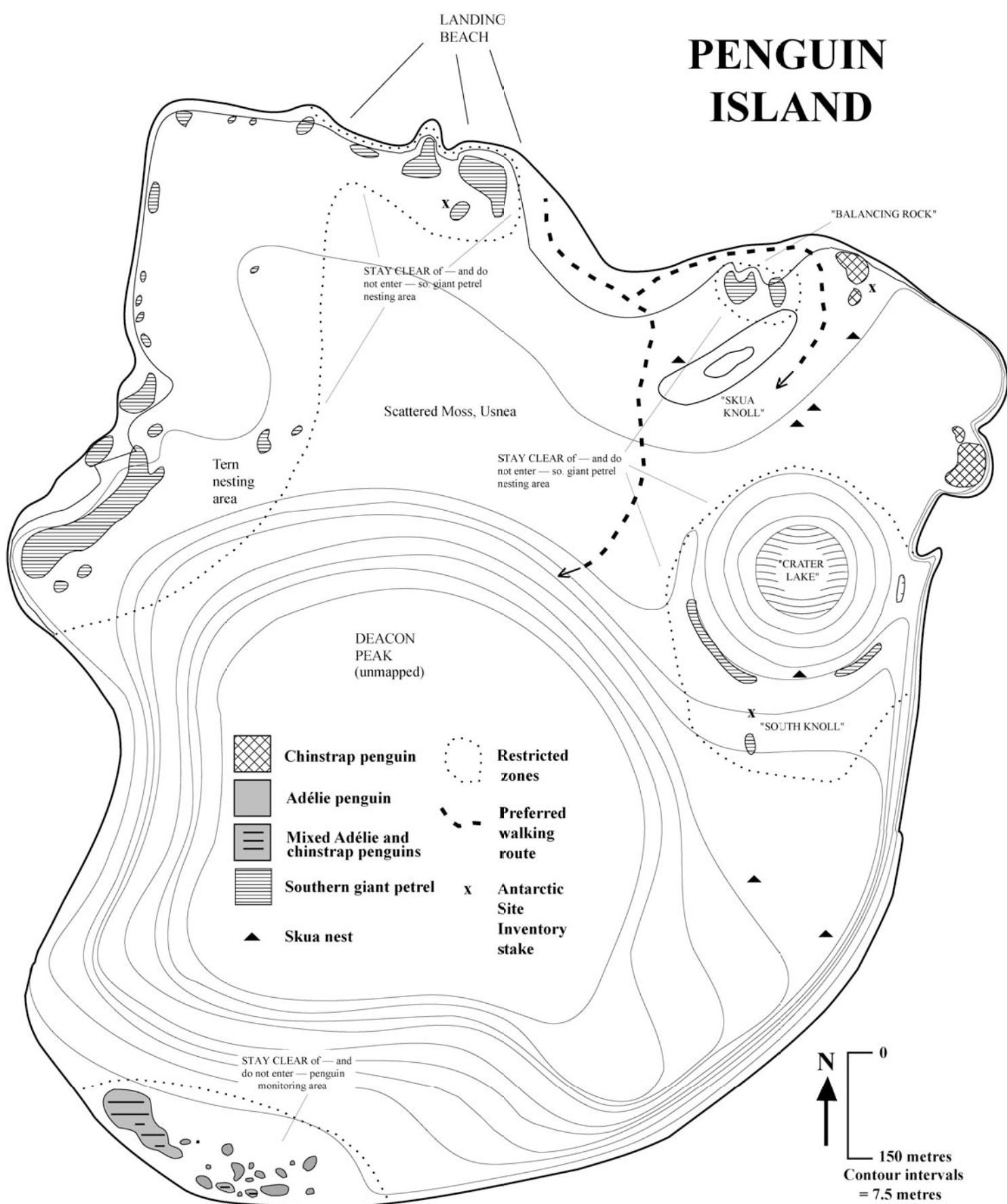
Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	3	256
1990-91:	0	0
1991-92:	1	65
1992-93:	7	506
1993-94:	13	1,166
1994-95:	24	1,692

	Zodiac Landings	Participating Visitors
1995-96:	23	1,449
1996-97:	12	1,090
1997-98:	15	1,394
1998-99:	20	1,744
1999-2000:	17	1,515
2000-01:	9	740
2001-02:	11	1,009
2002-03:	14	1,262
14-Season Total	169	13,888

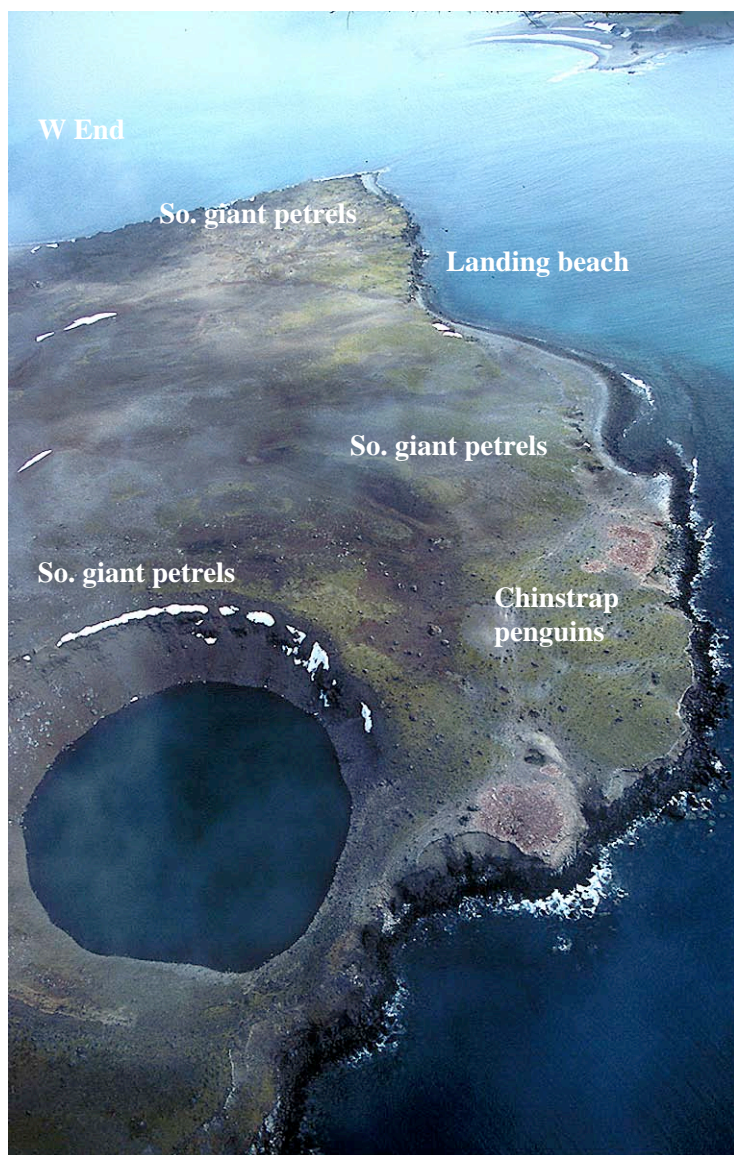
Proximate visitor sites. Turret Point on King George Island to the N, Admiralty Bay and the Ferraz and Arctowski Research stations to the W.

PENGUIN ISLAND



PENGUIN ISLAND

POINTERS FOR AVOIDING DISRUPTIONS



- AVOID AND STAY CLEAR OF SOUTHERN GIANT PETRELS NESTING ALONG THE N COAST AND NE CRATER
- WALK SLOWLY AND CAREFULLY AROUND NESTING, CRÈCHING, OR MOLTING PENGUINS
- AVOID AND STAY CLEAR OF SKUA TERRITORIES AND NESTING KELP GULLS
- STAY CLEAR OF — AND DO NOT HIKE OR WANDER TO — THE W END, WHERE TERNS ARE NESTING
- WATCH FOOTSTEPS CAREFULLY, ESPECIALLY WHEN SNOW COVER IS ABSENT, TO AVOID TRAMPLING MOSS AND LICHENS
- AVOID AND STAY CLEAR OF ANTARCTIC FUR SEALS, WHICH SHOULD BE GIVEN A WIDE BERTH AND SHOULD NOT BE APPROACHED
- STAY CLEAR OF — AND DO NOT HIKE UPON OR WANDER OVER — SCREE SLOPES
- STRICTLY CONTROL HIKES TO DEACON PEAK BY ORGANIZING GUIDED GROUPS, ALL FOLLOWING THE SAME PATH, AND NOT ALLOWING ANY FREE WANDERING
- AVOID CHINSTRAP AND ADÉLIE PENGUIN CONTROL COLONIES ON THE SE END

Robert Point, Robert Island (ROBE)

62°28'S, 59°23'W

Magnetic declination: 13.5°E

Inventory subarea: SH

Inventory acronym: ROBE

Species Diversity: LOW

Site Sensitivity: LOW

Location — History — Features

This is the SE tip of Robert Island, in the South Shetlands. The point has been known to sealers for more than a century, but it is not known for whom the point or the island is named.

Landing Characteristics

A new visitor site, which offers breeding chinstrap penguins, many elephant seals, and rugged scenery.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	November 29, 1995	BH	W. Discoverer
2.	December 11, 1995	BH	W. Discoverer
3.	February 9, 1996	BH RP	Livonia

Assessment and monitoring. Only preliminary surveying, censusing, mapping, and photodocumentation have been accomplished.

Fauna — Flora — Censuses

Penguins & flying birds. Confirmed breeding species include chinstrap penguin, kelp gull, and pintado petrel. Recent chinstrap penguin census data reported in Woehler (1993): 2,500 A3, 1987.

Seals. Southern elephant seals haul-out in substantial numbers. Weddell and Antarctic fur seals also may be found.

Flora. Crustose lichens observed near the pintado breeding cliffs.

Conservation Aspects

Site sensitivities. Chinstrap penguins are easily approached and disturbed.

Pointers for avoiding disruptions.

- Walk slowly and carefully around nesting, crèching, or molting penguins.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-95:	0	0
1995-96:	2	118
1996-97:	1	45
1997-98:	6	383
1998-99:	0	0
1999-2000:	1	56
2000-01:	0	0
2001-02:	6	532
2002-03:	4	224
14-Season Total	20	1,358

Proximate visitor sites. Mitchell Cove, Robert Island; Half Moon Island; the Aitcho Islands; and Fort point and Yankee Harbor on Greenwich Island.

Telefon Bay, Deception Island (TELE)

62°56'S, 60°40'W

Magnetic declination: 13.0°E

Inventory subarea: SH

Inventory acronym: TELE

Species Diversity: LOW

Site Sensitivity: LOW

Location — History — Features

A small bay on the NW side of Port Foster, Deception Island, named for a salvage vessel that moored in the bay in 1909, awaiting repairs. From a wide, flat, black-sand beach, an apron of this same material slopes gently upward to the steep face of the cinder-covered glacier, about 300 meters inland, which extends over an inner caldera rim. The rising slope extends to a ridge of black, cinder-covered volcanic material, which forms the E edge of one of the recent eruption craters. The crater has a flat floor with a small, shallow lake at its E end. The W end of the crater is being filled by a melt-water stream that enters the crater on the NE side. The upper edges of the principal crater walls show concentric cracking and are likely to slip and collapse. The ground is completely covered with a thick layer of recent coarse volcanic ash and small lapilli. There is no soil. The axis of the valley, when covered with snow, has a deep layer of water and mud underneath the snow and is nearly impassable. The ridge line, although also muddy, has a thinner cover of snow and is more easily passable. The beach has a flat profile both under water and up into the valley between the explosion craters to the W and the volcanic hills to the E within the caldera. At the E end of the beach is a wave-cut terrace at sea-level, which contains hot pools. Round piles of harder basaltic material are disposed along the crater rim, and there is debris remaining from volcanic bombs up to 20-30 centimeters in diameter, which were ejected from the crater during recent eruptions. These bomb fragments easily break apart. The main eruption crater is directly against the E-rim glacier (Goddard Hill-Mt. Pond Ice Cap), and its NE wall is actually formed by the glacier itself. The recent eruptions may have been partially through the ice. The glacier face is completely covered by black ash and cinders, which insulate it and retard melting.

Landing Characteristics

This is the site of the most recent volcanic eruption at Deception Island, and wildlife are generally absent. The pathway to the caldera becomes a potpourri of footprints in the ash.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	November 29, 1995	RN LB	Explorer
2.	November 26, 1996	RN	Explorer
3.	December 18, 1999	RN	Cal Star
4.	February 18, 2002	RN	Endeavour
5.	December 30, 2002	RP	Endeavour
6.	January 9, 2003	SF	Endeavour
7.	February 15, 2003	MB	Endeavour

Assessment and monitoring. Only preliminary surveying, censusing, and photodocumentation has been accomplished.

Fauna — Flora — Censuses

Penguins & flying birds. No site-specific penguin breeding populations are listed in Woehler (1993) and Woehler & Croxall (1996).

Seals. None.

Flora. None observed. Melt pools near the landing beach may contain algae.

Conservation Aspects

Site sensitivities. Caldera rim is eroding and unstable.

Pointers for avoiding disruptions.

- Stay clear of — and do not hike upon or wander too close to — edges of the caldera.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	6	492
1990-91:	4	452
1991-92:	6	606
1992-93:	1	72
1993-94:	12	819
1994-95:	5	403
1995-96:	7	543
1996-97:	4	282
1997-98:	7	566
1998-99:	13	1,039
1999-2000:	9	634
2000-01:	13	937
2001-02:	15	1,137
2002-03:	13	995
14-Season Total	115	8,977

Proximate visitor sites. There are two other visitor sites “inside” Port Foster: Whaler’s Bay and Pendulum Cove. Baily Head lies on the SE, seaward side of the island, Vapour Col on the E, seaward side.

Turret Point, King George Island (TURR)

62°05'S, 57°55'W

Magnetic declination: 11.0°E

Inventory subarea: SH

Inventory acronym: TURR

Species Diversity: MEDIUM

Site Sensitivity: HIGH

Location — History — Features

A point marked by conspicuous high rock stacks that form the E limit of King George Bay on the S coast of King George Island. The point was first charted by personnel of the *Discovery II* expedition in 1937. To the E lies Three Sisters Point, which is marked by three conspicuous boulders and form the W side of the entrance to Sherratt Bay.

Landing Characteristics

Uncharted water near shore. Hazardous rocks along the shoreline may be exposed, depending on the tide. Landings on broad cobble beach on S coast, which may be packed with ice depending on wind and swell; difficult to negotiate when snow-covered or wet, and especially if Antarctic fur seals are present. Melt pools inland. Extensive, heavily crevassed glacier above and behind the landing beach.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	November 20, 1995	BH	W. Discoverer
2.	November 28, 1995	BH	W. Discoverer
3.	December 11, 1995	BH	W. Discoverer
4.	December 20, 1995	BH	W. Discoverer
5.	November 26, 1997	RN SF	W. Discoverer

Assessment and monitoring. Only preliminary surveying, mapping, and photodocumentation has been accomplished. Documentation needs include: more thorough censusing of nesting kelp gulls and skuas, and ground survey of floral communities.

Fauna — Flora — Censuses

Penguins & flying birds. Confirmed breeding species include chinstrap and Adélie penguins, southern giant petrels, kelp gulls, blue-eyed shags, and Antarctic terns. Skuas, spp. and snowy sheathbills also noted, but no nests discovered.

Antarctic Site Inventory censuses:

Adélie penguins

1,077 N1 1997 Nov

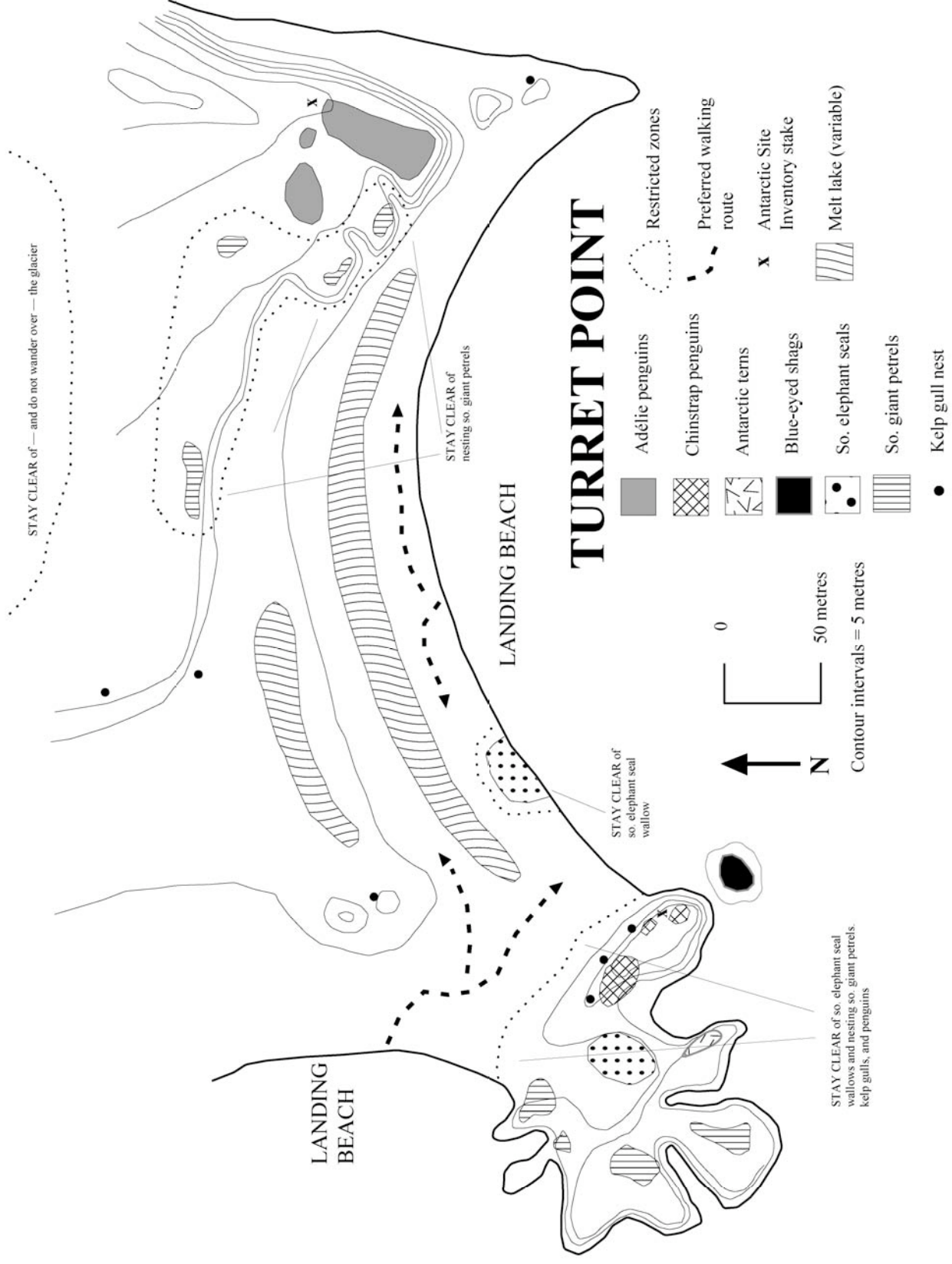
Recent historic Adélie penguin census reported in Woehler (1993): 1,918 N1, 1980. Woehler (1993) also lists 6,202 pairs of Adélie penguins at nearby Three Sisters Point (62°05'S 57°55'W); no site-specific chinstrap penguin breeding population is listed.

Seals. Southern elephant seals frequently haul-out in large numbers. Weddell seals also hauled-out during Inventory visits.

Flora. Cushion moss, spp., and crustose lichens *Xanthoria*, spp. and *Caloplaca*, spp. noted. Moss appears to be heavily damaged by the elephant seals.

Conservation Aspects

Site sensitivities. Wallowing southern elephant seals on the W and E ends are easily approached and disturbed. Southern giant petrels nesting on the W and E ends of the cobble beach are easily approached and disturbed; in November and December they will be incubating eggs. Adélie penguins nesting on slopes and ridges inland and to the E are easily approached and disturbed, especially in November and early December when adults will be incubating eggs; subsequently, adults will be guarding and provisioning chicks at the nest, then in crèche. Kelp gulls on widely scattered nests are easily approached and disturbed; in November and early December adults will be incubating eggs and, subsequently, guarding and provisioning chicks. Antarctic fur seals may be found on the beach and inland, often in large numbers. Glacier is unstable.



TURRET POINT



POINTERS FOR AVOIDING DISRUPTIONS

- AVOID AND STAY CLEAR OF SOUTHERN GIANT PETRELS NESTING ON THE SW END AND ON SLOPES AND RIDGES INLAND AND TO THE E
- AVOID AND STAY CLEAR OF WALLOWING SOUTHERN ELEPHANT SEALS
- WALK SLOWLY AND CAREFULLY AROUND NESTING, CRÈCHING, OR MOLTING ADÉLIE PENGUINS
- AVOID AND STAY CLEAR OF ANTARCTIC FUR SEALS, WHICH SHOULD BE GIVEN A WIDE BERTH AND SHOULD NOT BE APPROACHED
- STAY CLEAR OF — AND DO NOT HIKE UPON OR WANDER OVER — THE GLACIER

Pointers for avoiding disruptions.

- Avoid and stay clear of southern giant petrels nesting on the SW end and on slopes and ridges inland and to the E.
- Avoid and stay clear of wallowing southern elephant seals.
- Walk slowly and carefully around nesting, crèching, or molting penguins.
- Avoid and stay clear of Antarctic fur seals, which should be given a wide berth and should not be approached.
- Stay clear of — and do not hike upon or wander over — the glacier.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	0	0
1990-91:	0	0
1991-92:	0	0
1992-93:	0	0
1993-94:	1	99
1994-95:	1	146
1995-96:	4	180
1996-97:	3	185
1997-98:	9	858
1998-99:	2	138
1999-2000:	1	89
2000-01:	2	181
2001-02:	1	61
2002-03:	1	66
14-Season Total	25	2,003

Proximate visitor sites. Penguin Island lies S.

Vapour Col, Deception Island (VAPO)

62°59'S, 60°44'W

Magnetic declination: 13.2°E

Inventory subarea: SH

Inventory acronym: VAPO

Species Diversity: LOW

Site Sensitivity: LOW

Location — History — Features

Col S of Stone Throw Ridge on W side of Deception Island. Name originates from fumaroles observed in the col. This is the only location on Deception Island where there is a complete cross-section through the volcanic succession.

Landing Characteristics

Inventory researchers have visited this site twice, once via a helicopter drop, the second time via a zodiac tour. Coastline subject to heavy swell and zodiac landings would be difficult.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	January 16, 1999	RN SF	Endurance
2.	February 5, 2001	RN	Cal Star

Assessment and monitoring. Preliminary surveying, censusing, mapping, and photodocumentation accomplished.

Fauna — Flora — Censuses

Penguins & flying birds. Chinstrap penguins are confirmed breeders. Recent chinstrap penguin census data reported in Woehler (1993): 75,000 A4, 1987.

Seals. Leopard seals regularly observed offshore during the penguin breeding season.

Flora. Extensive *Prasiola crispa* noted.

Conservation Aspects

Site sensitivities. If visitors reach the shore, penguins are easily approached and disturbed, especially in November and early December when adults will be incubating eggs; subsequently, adults will be guarding and provisioning chicks at the nest, then in crèche. Heavy congestion along the shore, with many penguins diving into the sea. Spanish researchers are conducting long-term studies at this site, and their staked and roped penguin group should be totally avoided and not disturbed.

Pointers for avoiding disruptions.

- Walk slowly and carefully around — and do not interfere with or block — penguins moving back and forth along the melt stream.
- Walk slowly and carefully around nesting, crèching, or molting chinstrap penguins.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
14-Season Total	0	0

Proximate visitor sites. Baily Head on the SE, seaward end of Deception Island; Whaler's Bay, Pendulum Cove, and Telefon Bay located within Port Foster.

Whalers Bay, Deception Island (WHAL)

62°59'S, 60°34'W

Magnetic declination: 13.4°E

Inventory subarea: SH

Inventory acronym: WHAL

Species Diversity: MEDIUM

Site Sensitivity: LOW

Location — History — Features

This is the small bay first encountered after passing through Neptune's Bellow's, into the Port Foster, Deception Island. The French explorer, Jean-Baptiste Charcot, named the bay because of its heavy use by whalers at the turn of the 20th century. Deception Island is ring shaped and 8 nautical miles in diameter, enclosing a large harbor called Port Foster. This bay inside Deception Volcano's caldera is a landlocked basin 5 nautical miles long from NW to SE and 3.5 nautical miles wide.

Deception is the largest of three recent volcanic centers in the South Shetlands, Penguin and Bridgeman Islands being the other two. The rim has an average elevation of 300 meters, with highest points at Mt. Pond (542 meters) to the E and Mt. Kirkwood (467 meters) to the S; it is composed of lava and cinders, but above 100 meters it is dominated by glaciers and ash-covered ice that reaches the sea at many places along the coast and on the E side of Port Foster.

The water in Port Foster is warmer than the surrounding sea because of numerous active fumaroles. A long black sand beach stretches along the E shore N of Baily Head. There were eruptions in 1800, 1812, 1842, 1871, 1912, 1956, 1967, 1969, 1970, and 1972.

On site is an Historic Site and Monument, a memorial plaque marking the position of a cemetery where approximately 40 Norwegian whalers were buried in the first half of the 20th century; the cemetery was swept away by the February 1969 volcanic eruption. Another Historic Site and Monument is a cairn with memorial plaque, honoring Captain Adolphus Amandus Andresen who established the first whaling operation at Deception Island in 1906.

Whaler's Bay has a SW-facing beach just inside and to the N of the caldera indentation known as Neptune's Bellows. A broad cinder beach extends over 100 m from the water's edge to the steeply-rising inner wall of the caldera. Behind the abandoned whale-processing plant, the glacier meets the apron of cinders. To the SE, the caldera rim is partially breached at Neptune's Window, and the bedrock of the rim is exposed along a steep, 2-kilometer-long section of cliff extending from E of Neptune's Window to Neptune's Bellows.

The onshore boilers are remnants from previous shore-based whaling activities. The Kroner Lake Antarctic Specially Protected Area (ASPA) is at the southern end of the long shoreline. The remains of the abandoned British Antarctic Survey base are located between Kroner Lake and the boilers. Petrel nests are scattered rather widely over a vast area between the shoreline and a feature in the caldera wall known as Neptune's Window. Whalers Bay is located "inside" the caldera of Deception Island, and is the first landing site reached after passing inside Deception through the narrow passage known as Neptune's Bellows.

Little wildlife is present, though Antarctic terns frequent the *Deschampsia*-laden hillsides behind the ruined station, an assortment of skuas often collects in the melt pools just off of the landing beach, and fur seals often straggle in to roam the long, warm, black sand beach, typically collecting at the far end toward Neptune's Window. The water is volcanically heated, often leaving roasted, boiled krill along the shoreline.

Pyroclastic debris ranging in size from coarse ash to small lapilli covers the entire broad area of the beach and back shore clear to the inner wall of the caldera. These cinders are mostly black, and cover many of the old barrels, whale bones, and other debris from the whaling and research groups that occupied the area until recently. Several melt-water streams from the snow and glacier above form channels cutting through the beach. The beach is flat and has a very shallow slope both onshore and offshore. Steam may rise from hot springs along the shoreline, and gas rising from the springs has a strong, sulfurous smell.

Landing Characteristics

Protected anchorage located immediately E-NE after passing through Neptune's Bellows and entering Port Foster. Zodiac landings on broad, black sand beach fronting the derelict Norwegian whaling and British Antarctic Survey stations.

Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	December 9, 1994	RN BH	Alla Tarasova
2.	December 12, 1994	RN BH	Livonia
3.	January 23, 1995	RN	Explorer
4.	November 18, 1995	RN LB	Explorer
5.	November 30, 1995	BH SF	W. Discoverer
6.	January 12, 1996	RN	Endurance
7.	February 2, 1996	RN	Livonia
8.	November 26, 1996	RN	Explorer
9.	November 26, 1999	LB BP	Cal Star
10.	December 18, 1999	RN	Cal Star
11.	January 25, 2000	RN	Shuleykin
12.	December 12, 2000	RN	Cal Star
13.	January 11, 2001	SF	Cal Star
14.	December 12, 2001	RN SF CE	Endeavour
15.	January 6, 2002	RP	Endeavour
16.	February 5, 2002	MM	Endeavour
17.	February 18, 2002	RN	Endeavour
18.	December 30, 2002	RP	Endeavour
19.	January 9, 2003	SF	Endeavour
20.	February 2, 2003	MM	Endeavour
21.	February 15, 2003	MB	Endeavour

Assessment and monitoring. Surveyed, mapped, censused, and photodocumented (aerial and terrestrial). Regular censusing of nesting kelp gulls near the abandoned station, and the "club" of non-nesting skuas at the melt pond near the landing beach. More thorough surveying of floral communities and tern nesting area needed.

Fauna — Flora — Censuses

Penguins & flying birds. Kelp gulls nest on some of the abandoned onshore buildings. Pintado petrels and Wilson's storm-petrels nest in the cliffs and scree between Neptune's Window and Neptune's Bellow. Antarctic terns are regularly seen, and suspected of breeding inland, behind the abandoned British Station. No site-specific penguin breeding populations are listed in Woehler (1993) and Woehler & Croxall (1996).

Seals. Weddell, crabeater, and Antarctic fur seals regularly haul-out on this beach.

Flora. There are extensive *Usnea*, spp. patches between Neptune's Window and Neptune's Bellow. Crustose lichens *Xanthoria*, spp. and *Caloplaca*, spp. also noted on cliffsides. *Deschampsia* noted behind the abandoned British station.

Conservation Aspects

Site sensitivities. Much erosion on the heavily visited scree slopes and cliff edges near Neptune's Window, located on the high, outer rim above the Bay; to the SW, between Neptune's Window and the Bay, the erosion is severe and this undermined slope has produced significant rock falls. Patches of *Usnea* lichens and hair grass (*Deschampsia Antarctica*) on uphill slopes leading to, and in the vicinity of, Neptune's Window, are readily accessed and easily may be trampled. Pintado petrels on scree slopes above the Bay are easily approached and disturbed.

Wilson's storm-petrels nest on scree slopes above the Bay, and their hidden nesting cavities may be trampled.

Beginning stands of moss around the derelict stations, in the vicinity of the abandoned boilers and tanks, and near the melt pool (located above the beach and frequented by skuas) are readily accessed and easily may be trampled.

Kelp gulls nesting at the base and on top of abandoned boilers at the derelict whaling station are easily approached and disturbed; in November and early December adults will be incubating eggs and, subsequently, guarding and provisioning chicks.

Antarctic terns nesting opportunistically on available, open ground between the derelict stations and higher slopes are skittish, defensive, and very easily disturbed, even from a distance.

Kroner Lake, beyond the derelict hanger, toward Port Foster, is completely off limits under the Antarctic Treaty. Late season, Antarctic fur seals arrive, perhaps in large numbers.

Pointers for avoiding disruptions.

- Use existing trails to hike to Neptune's Window.
- Strictly control hikes to Neptune's Window and the high, outer rim by organizing guided groups, all following the same path, avoiding trampling of lichens, and not allowing any access to, or wandering on, severely eroded slopes between Neptune's Window and the Bay.
- Stay clear of — and do not hike upon or wander over — scree slopes.
- Walk carefully around abandoned boilers and tanks, staying clear of nesting kelp gulls and avoiding any trampling of emergent moss stands.
- Strictly control hikes behind the derelict stations and inland toward the higher slopes by organizing guided groups, which are well spaced, all following the same path, and carefully avoiding any disturbance of nesting terns.
- Avoid and stay clear of Antarctic fur seals, which should be given a wide berth and should not be approached.

WHALER'S BAY



POINTERS FOR AVOIDING DISRUPTIONS

- USE EXISTING TRAILS TO HIKE TO NEPTUNE'S WINDOW
- STRICTLY CONTROL HIKES TO NEPTUNE'S WINDOW AND THE HIGH, OUTER RIM BY ORGANIZING GUIDED GROUPS, ALL FOLLOWING THE SAME PATH, AVOIDING TRAMPLING OF LICHENS, AND NOT ALLOWING ANY ACCESS TO, OR WANDERING ON, SEVERELY ERODED SLOPES BETWEEN NEPTUNE'S WINDOW AND THE BAY
- STAY CLEAR OF — AND DO NOT HIKE UPON OR WANDER OVER — SCREE SLOPES
- WALK CAREFULLY AROUND ABANDONED BOILERS AND TANKS, STAYING CLEAR OF NESTING KELP GULLS AND AVOIDING ANY TRAMPLING OF EMERGENT MOSS STANDS
- STRICTLY CONTROL HIKES BEHIND THE DERELICT STATIONS AND INLAND TOWARD THE HIGHER SLOPES BY ORGANIZING GUIDED GROUPS, WHICH ARE WELL SPACED, ALL FOLLOWING THE SAME PATH, AND CAREFULLY AVOIDING ANY DISTURBANCE OF NESTING TERNS.
- AVOID AND STAY CLEAR OF ANTARCTIC FUR SEALS, WHICH SHOULD BE GIVEN A WIDE BERTH AND SHOULD NOT BE APPROACHED

Photo: B. Houston

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	17	1,682
1990-91:	13	1,496
1991-92:	23	2,899
1992-93:	22	1,711
1993-94:	37	3,480
1994-95:	66	5,241
1995-96:	67	5,033
1996-97:	51	3,012
1997-98:	60	5,344
1998-99:	69	5,427
1999-2000:	86	7,333
2000-01:	79	7,065
2001-02:	76	6,972
2002-03:	95	8,934
14-Season Total	761	65,629

Proximate visitor sites. Telefon Bay and Pendulum Cove are located within Port Foster, Baily Head on the E, outside end of Deception.

Yankee Harbor, Greenwich Island (YANK)

62°32'S, 59°47'W

Magnetic declination: 11.25°E

Inventory subarea: SH

Inventory acronym: YANK

Species Diversity: MEDIUM

Site Sensitivity: LOW

Location — History — Features

This small harbor on the SW side of Greenwich Island is entered between Glacier Bluff and Spit Point. The harbor was well known to American and British sealers as early as 1820. The harbor is enclosed by a recurved bay-mouth bar made up of coarse gravel and cobbles. The entry to the harbor around the end of this bar is very narrow. Well-developed, raised-beach terraces are located at about 3 meters and at 10 meters above the currently active beach, and provide territories for nesting gentoo penguins. Landings are typically made on a coarse gravel beach below the first terrace, in the vicinity of a navigational marker that looks like a railroad tie. Midway between the lower and upper ridges is a distinct, partially consolidated layer of cobbles, sand, and soil, which may represent another former beach level. The land rises gently from the shingle beach along the SE side of the harbor to a hut at about 15-20 meters above water level, then it rises steeply up a slope of coarse, angular talus and some finer scree. Above, cliffs rise 100 or more meters to a rugged, knife-edge summit. The principal bedrock exposed in the cliffs is well-layered, reddish brown basalt. Rock fragments in the talus slope below the cliffs are mainly basaltic. Some mosses are well developed on some areas of the talus slope, and on flatter areas at the bottom and around the hut. A large glacier rims the E and N sides of the bay.

There are trytops from early sealing activities. Also on site is an Historic Site and Monument, a commemorative plaque erected to the memory of Captain Robert McFarlane, who in 1820 explored the Antarctic Peninsula in the brigantine *Dragón*.

Zodiac landings are typically made on the gravel beach below the first raised-beach terrace, near a navigational marker that looks like a railroad tie. Gentoo penguins nest on the terraces above the landing beach, as well as in the vicinity of the abandoned *refugio* and nearby hillside. The shoreline of Yankee Harbor is littered with trytops and other artifacts from long defunct sealing activities. The long spit guarding the harbor provides an excellent haul-out location for seals, and is home to a number of nesting skua pairs during the austral spring and summer.

Landing Characteristics

Small harbor on SW side of Greenwich Island, entered between Glacier Bluff and Spit Point. Landings on recurved, gravel and cobble bar enclosing this small harbor, or gravel beach at inland end of this recurved bar. Raised terraces above the bar and gravel beach. Artifacts from 19th century sealing operations — trytops and other relics — may be found on the cobble bar. There is a melt pool of variable extent located inland and E past the first terrace of nesting penguins, and an abandoned *refugio* on one of the higher ridges. Large, crevassed glacier and snowfields rim the bay.

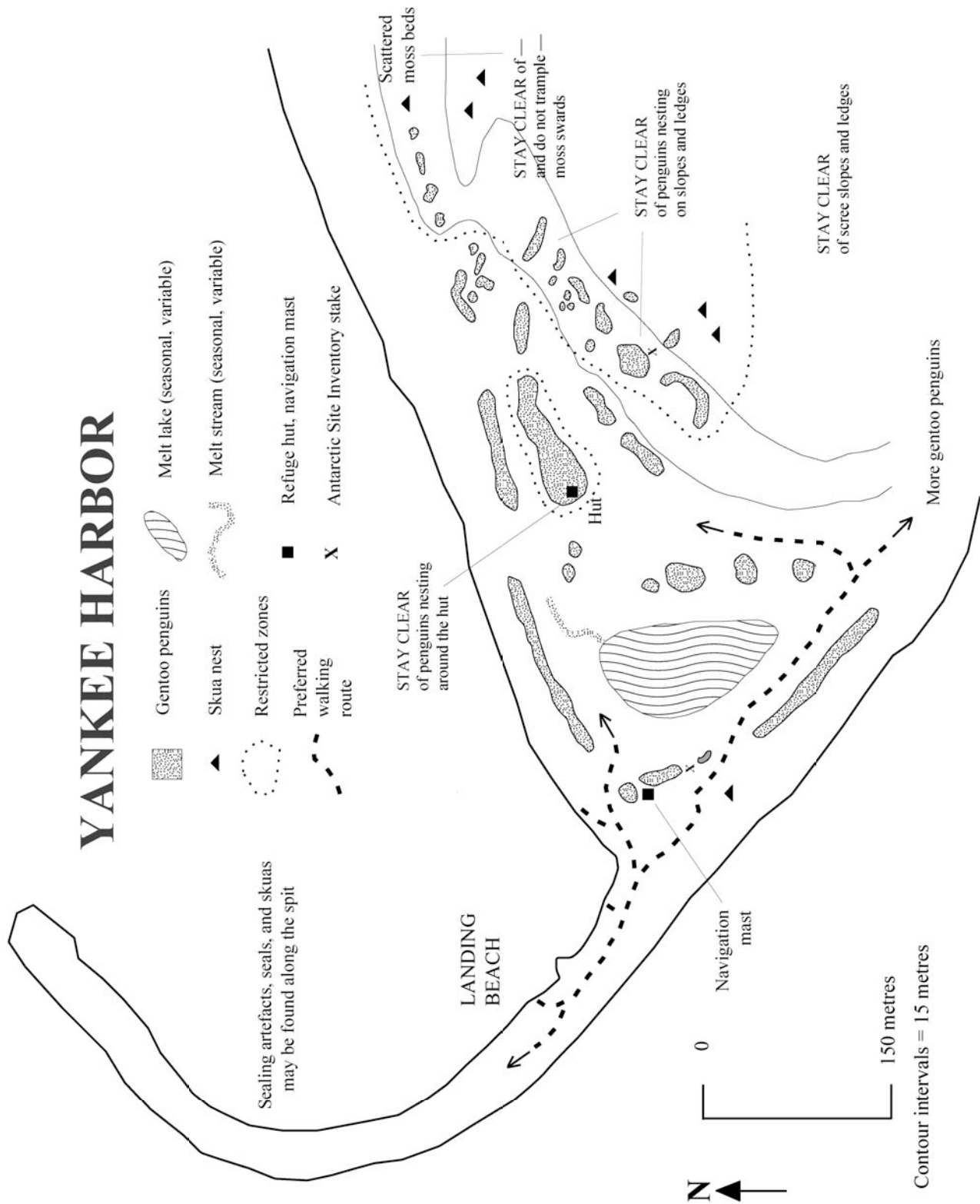
Antarctic Site Inventory Effort

Visits by Antarctic Site Inventory researchers, 1994-2003:

1.	December 12, 1994	RN	Livonia
2.	December 14, 1994	RN BH ST	Explorer
3.	January 12, 1995	RN RD	Livonia
4.	December 15, 1995	LB	Explorer
5.	November 23, 1996	RN WT SF	Explorer
6.	January 20, 1999	RD ST	Vavilov
7.	November 26, 1999	LB BP	Cal Star
8.	December 13, 1999	RN	Cal Star
9.	December 24, 2000	SF LF	Cal Star
10.	December 29, 2002	RP	Endeavour

Assessment and monitoring. Surveyed, mapped, and photodocumented (aerial and terrestrial). Regular, site-wide censusing of gentoo penguins. More thorough ground-survey of floral communities needed.

YANKEE HARBOR



YANKEE HARBOR



POINTERS FOR AVOIDING DISRUPTIONS

- WALK SLOWLY AND CAREFULLY AROUND NESTING, CRÈCHING, OR MOLTING GENTOO PENGUINS
- DO NOT DISTURB SEALING ARTIFACTS
- AVOID AND STAY CLEAR OF ANTARCTIC FUR SEALS, WHICH SHOULD BE GIVEN A WIDE BERTH AND SHOULD NOT BE APPROACHED
- AVOID AND STAY CLEAR OF SKUA TERRITORIES
- STAY CLEAR OF — AND DO NOT HIKE UPON OR WANDER OVER — THE GLACIER, SNOWFIELDS OR SCREE SLOPES

Fauna — Flora — Censuses

Penguins & flying birds. Confirmed breeding species include gentoo penguin and skuas, spp. Snowy sheathbills have been observed among the gentoos, but breeding is not confirmed. Storm-petrels, spp. have been observed at higher elevations and presumably breed.

Antarctic Site Inventory censuses:

Gentoo penguin

4,751	N1	1999 Nov
3,974	N1	2000 Dec
3,804	N2	2002 Dec

Recent historic gentoo penguin census reported in Woehler (1993): 4,000 N3/4, 1990.

Seals. Southern elephant seals, Weddell, and crabeater seals haul-out either on the long spit into the harbor, the landing beach, or on the raised beach terrace above the landing beach.

Flora. *Xanthoria*, spp. and other crustose lichens, cushion moss, spp., *Deschampsia*, and *Colobanthus* and *Prasiola* have been noted.

Conservation Aspects

Site sensitivities. Gentoo penguins nesting in scattered colonies on the raised terraces and on higher, inland slopes and ridges are easily approached and disturbed, especially in November and early December when adults will be incubating eggs; subsequently, adults will be guarding and provisioning chicks at the nest, then in crèche. Skuas nest on widely scattered territories and are easily accessed and disturbed, particularly, later in the season (from mid-January) when adults are fiercely protecting young. Wilson's storm-petrel nest in loose scree at higher elevations. Antarctic fur seals frequent the gravel bar, and in larger numbers as the season progresses.

Pointers for avoiding disruptions.

- Walk slowly and carefully around nesting, crèching, or molting gentoo penguins.
- Do not disturb sealing artifacts.
- Avoid and stay clear of Antarctic fur seals, which should be given a wide berth and should not be approached.
- Avoid and stay clear of skua territories.
- Stay clear of — and do not hike upon or wander over — the glacier, snowfields or scree slopes.

Visitation Aspects

Numbers of tourist zodiac landings and participating visitors, 1989-2003:

	Zodiac Landings	Participating Visitors
1989-90:	0	0
1990-91:	0	0
1991-92:	2	763
1992-93:	2	474
1993-94:	3	233
1994-95:	8	544
1995-96:	19	1,893
1996-97:	7	473
1997-98:	7	589
1998-99:	12	1,045
1999-2000:	12	1,040
2000-01:	9	778
2001-02:	6	655
2002-03:	25	2,175
14-Season Total	112	10,662

Proximate visitor sites. Half Moon Island; Fort Point on Greenwich Island; Robert Point and Mitchell Cove on Robert Island; and the Aitcho Islands.